The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[*The* MINING JOURNAL *is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.*]

No. 2558.—VOL. LIV. LONDON, SATURDAY, AUGUST 30, 1884. [WITH SUPPLEMENT.] PRICE ..... SIXPENCE. BY POST, £1 4s. PER ANNUM.

MR. JAMES H. CROFTS, STOCK AND SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING STOCKS and SHARES (British and Foreign), Consols, Banks, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.

BUSINESS negotiated in STOCKS and SHARES not having a general market value.

Every Friday a GENERAL and RELIABLE LIST issued (a copy of which will be forwarded on application), containing closing prices of the week.
MINES INSPECTED.
BANKERS: CITY BANK, London—SOUTH CORNWALL BANK, St. Austell.
TELEPHONE NUMBER 1003.

SPECIAL DEALINGS in the following (or part):—

Asia Minor, 3s. 9d.	15 Great Laxey, £9 15s.	50 Prince of Wales, 5s.
Akankoo, fully paid, 8s. 6d.	25 Gunnislake (Clitters), 10s.	100 Pestarena, 2s.
Almada, 5s.	70 Hoover Hill, 4s. 6d.	10 Rio Tinto, £16 16s. 3d.
Bedford United, 30s.	50 Home Mines Trust, 17s. 6d.	25 Ruby, 18s.
Bratsberg, 31s.	40 Indian Consoli., 2s 3d	10 ditto (New), 15s.
Cankim Bamoo, 2s 9d	90 Indian Glenrock, 2s 9	25 Richmond, £3 6s. 3d
Carn Camborne.	90 Javali, 2s. 6d.	15 Roman Grav., £3 12 6
Callao Bis, 7s.	50 Kapanga, 3s. 3d.	10 Schwab's Gully, £6½
Chile Gold, 3s. 3d.	25 Killifreth, 7s. 9d.	100 Spitzkop.
Colombian Hyd., 9s 6	50 Kongsberg.	25 South Caradon, 15s.
Consolidated, 2s.	50 La Plata (New), 5s. 3	20 So. Condurrow, £8⅞.
California, 13s. 9d.	100 Last Chance, 1s.	50 South Darren, 4s. 9d.
Colorado, 37s.	25 Leadhills, £1 16s. 3d.	80 South Devon Uni., 3s
Canada Copper, 4s.	100 Lisbon-Berlyn, 10s.	60 So. Penstruthal, 1s 6
Chontales, 4s.	25 Marke Valley, 13s.	50 Tambracherry.
Cor. South Australian Copper, 2s.	100 Michipicoten.	10 Tolima A, £7.
Denver, 2s.	30 Mona.	10 ditto B, £5 12s. 6d.
Devala Moyar, 3s. 9d.	Montana, 38s.	50 Transvaal Gold, 21s.
Devon Consols, £3.	50 Mounts Bay, 3s.	40 Tresavean, 5s. 3d.
Devon Friend., 2s. 6d	100 Mysore Gold, 8s. 3d.	20 Trevaunance, 31s. 3d.
Devon United, 5s.	80 New Caradon, 1s. 3d.	30 Uni. Mexican, £3 3 9
Dolcoath.	100 New Callao, 2s. 9d.	100 Victoria Gold, 5s.
Don Pedro.	30 New Emma, 13s. 6d.	10 Wheal Agar, £17.
Drakewalls, 2s. 6d.	15 New Quebrada.	10 Wheal Basset.
Duchy Peru.	25 New Kitty, 23s. 9d.	100 West Callao, 2s. 9d.
East Blue Hills, 5s.	120 Nouveau Monde, 2s.	20 West Phœnix.
Eberhardt, 4s. 3d.	85 New W. Caradon, 3s 9	75 West Caradon, 1s.
East Caradon, 4s.	100 Old Shepherds, 10s.	30 West Crebor, 1s.
East Lovell.	50 Organos, 14s.	50 West Polbreen.
East Wh. Rose, 8s. 3d	100 Orita, 23s.	10 West Kitty, £10¼.
Ecton, 21s. 3d.	70 Oscar, 10s. paid, 13s 9	80 Wheal Coates, 2s. 6d.
Frongoch.	100 Potosi (New), 8s. 6d.	20 Wh. Crebor, £1 11s.
Frontino, 14s. 6d.	50 Port Phillip, 2s. 3d.	80 Wheal Jane.
Goginan.	50 Parys Copper, 1s. 6d.	10 Wheal Kitty.
Gold Coast, 3s 6d.	30 Phœnix United.	50 Wheal Silver & Lanteglos.
Guinea Coast Gold, 2s	20 Panulcillo, £3 16s. 3d	100 Wynaad Persev., 1s. 3

* SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

* BUSINESS at CLOSE PRICES in all Market TIN, COPPER, LEAD GOLD, SILVER, and DIAMOND SHARES
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

RAILWAYS — SPECIAL BUSINESS.— Fortnightly Accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

FOREIGN BONDS — SPECIAL BUSINESS. — Fortnightly Accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

AMERICAN AND CANADIAN STOCKS AND SHARES—SPECIAL BUSINESS.
Fortnightly Accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

OPTIONS in all STOCKS and SHARES dealt in.—
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

GOLD AND SILVER MINES.—SPECIAL BUSINESS in ALL marketable INDIAN GOLD SHARES, and in Colombian Hydraulic, California, Callao "Bis," Gold Coast, Guinea Gold Coast, Kongsberg, New Callao, Oscar, West Callao, Tolima A, Tolima B, La Plata, Rio Tinto, Frontino and Bolivia, Potosi, Chile, Nouveau Monde, Ruby, Richmond, Victoria.

* SHARES IN THE ABOVE SOLD FOR FORWARD DELIVERY ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

MISCELLANEOUS SHARES of all DESCRIPTIONS BOUGHT or SOLD—SPECIAL BUSINESS:—Brighton Aquarium, General Credit, Hudson's Bay, Native Guano, Suez Canal, Westminster Aquarium, and Hotel Shares.
SHARES SOLD for FORWARD DELIVERY, ONE, TWO, or THREE MONTHS, on DEPOSIT of TWENTY PER CENT.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

TRANSVAAL GOLD AND SOUTH AFRICAN DIAMOND FIELDS. SPECIAL BUSINESS in all Transvaal Shares, including LISBON-BERLYN, TRANSVAAL, SPITZ-KOP, SCHWAB'S GULLY, KIMBERLEY NORTH BLOCK.

* SHARES IN THE ABOVE SOLD FOR FORWARD DELIVERY ON DEPOSIT OF TWENTY PER CENT.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.
ESTABLISHED 1842.

MR. WILLIAM H. BUMPUS, STOCK BROKER AND MINING SHARE DEALER,
44, THREADNEEDLE STREET, LONDON, E.C.
[Established at this Address in 1867.]

BUSINESS transacted in ALL STOCK EXCHANGE SECURITIES, MINING and MISCELLANEOUS SHARES of every description.
An INVESTMENT LIST free on application.

SPECIAL BUSINESS in the undermentioned:—

Akankoo, 8s. 6d.	50 Grogwinion.	70 Potosi (New), 9s.
Almada, 6s.	100 Home Mines Trust, 17s. 6d.	40 Quebrada, £3 8s. 9d.
Bratsberg, 30s.	100 Kohinoor B, 2s. 9d.	50 Ruby (New), 8s. 9d.
Balkis.	70 Kapanga, 3s.	15 Richmond, £3⅝.
Callao Bis, 7s. 6d.	120 La Plata, 5s.	10 Roman Gravels, £3⅜.
Chile Gold, 3s. 6d.	50 Lisbon-Berlyn, 11s. 6d	5 South Condurrow.
Colombian, 9s.	10 Minera.	50 South Caradon, 15s 6
Colorado, 37s. 6d.	40 Marke Valley, 13s.	100 Tocopilla, 2s. 6d.
California Gold, 13s.	100 Montana, 41s.	10 Tolima A, £7¼.
Chontales, 4s. 6d.	100 Mounts Bay.	50 Transvaal Gold, 21s
Duchy Peru.	150 Nouveau Monde, 2s. 3	30 Trevaunance.
Dolcoath, £72.	50 New Caradon.	25 Untd. Mexican, £3 3 9
East Wheal Rose, 8s 9	100 Old Shepherds, 10s. 6	50 Wentworth Gold, 6s.
Ecton, 20s. 6d.	60 Organos, 15s.	10 West Kitty, £10¼.
East Blue Hills, 5s. 9d	50 Orita, 25s.	15 Wh. Grenville, £6¼.
Eberhardt, 5s. 9d.	25 Polberro.	50 West Godolphin, 23s.
Frontino, 16s.	30 Panulcillo, £3 15s.	50 Wheal Crebor, 29s.

Where prices are not inserted offers may be made.

* The present is a most favourable opportunity for investing in SOUND MINING SECURITIES, a judicious purchase of which at the low prices now ruling will, in all probability, result in large profits within the next few months.
Mr. BUMPUS devotes SPECIAL ATTENTION to LEGITIMATE MINES, and is in a position to afford reliable information and advice to intending purchasers and others in the selection of Shares either for INVESTMENT or SPECULATION. Correspondence invited.
ESTABLISHED 1867.

BRITISH AND FOREIGN MINING OFFICES.
MESSRS. PETER WATSON AND CO.,
18, AUSTIN FRIARS,
OLD BROAD STREET, LONDON, E.C.
BANKERS: THE ALLIANCE BANK (Limited).

MESSRS. PETER WATSON AND CO.'S BRITISH AND FOREIGN MONTHLY MINING NEWS—STOCK AND SHARE INVESTMENT NOTES—MINES, MINERALS, AND METAL MARKETS—SHARE LIST, No. 865, Vol. XVII., for AUGUST month, is ready, and will be sent to customers on application.

Annual Subscription..... 5s. | Single Copy..... 6d.

MR. ALFRED E. COOKE,
BRITISH AND FOREIGN STOCK AND SHARE DEALER,
9, OLD BROAD STREET, LONDON.
ESTABLISHED 1853.
(Opposite the Stock Exchange, with which his offices are in DIRECT TELEGRAPHIC COMMUNICATION.)

Mr. ALFRED E. COOKE can SELL the following shares, or any smaller marketable number at prices affixed FREE of COMMISSION:—

60 Almada, 5s. 6d.	75 Goginan.	50 Prince of Wales, 4s 6d
35 Balkis, 10s.	25 Gold Coast, 4s. 3d.	10 Rio Tinto.
20 Bedford United, 32s 6	25 Hoover Hill, 5s.	30 Ruby, 19s. 6d.
15 Bratsberg, 30s.	50 Home Mines Trust, 17s. 3d.	50 Rhodes Reef.
50 Cankim Bamoo, 2s. 3d	50 Indian Consolidated, 2s. 6d.	10 Richmond, £3⅝.
35 Carn Camborne.	30 Indian Glenrock, 2s 6	10 Roman Gravels, £3¼.
50 Callao Bis, 8s. 6d.	100 Kongsberg, par.	7 Schwab's Gully, £6½.
40 Chile Gold, 3s. 6d.	20 La Plata (New), 5s.	20 South Caradon, 15s.
35 Colombian Hydraulic 8s, 3d.	20 Leadhills, 35s.	20 South Darren, 4s. 9d.
60 Consolidated.	20 Lisbon-Berlyn, 11s. 6d	55 South Kitty, 10s.
25 California, 13s.	50 Mounts Bay, 3s. 3d.	25 Tambracherry.
50 Chontales, 4s. 3d.	50 Mysore Gold, 8s. 9d.	10 Tolima A, £7¼.
40 Cor. South Australian Copper, 1s. 9d.	50 New Caradon, 2s. 3d.	5 ditto B.
85 Denver, 2s.	50 New Callao, 3s.	40 Transvaal Gold, 23s. 6
65 Devala Moyar, 3s.	20 New Emma, 12s. 6d.	50 Tresavean, 6s.
10 Devon Consols, £3½.	10 New Kitty, 23s. 9d.	15 Trevaunance, £1⅞.
50 Devon Friendship, 2s.	80 Nouveau Monde, 2s 3	20 United Mexican, £3¼
40 Duchy Peru.	30 New W. Caradon, 4s.	40 Victoria Gold, 5s. 6d.
50 East Blue Hills, 5s.	40 Old Shepherds, 10s.	7 Wheal Agar, £17½.
30 Eberhardt, 4s. 9d.	30 Organos, 15s.	5 Wheal Basset, £3¾.
10 East Lovell.	10 Orita, 23s. 9d.	20 West Callao, 3s. 6d.
50 East Wheal Rose, 8s 6	20 Oscar, 14s.	100 West Caradon, 2s.
15 Ecton, 20s.	25 Oscar, fully paid, 16s3d	80 West Crebor, 2s.
20 Flagstaff.	100 Potosi, 7s. 9d.	75 West Polbreen, 10s.
50 Frongoch, 9s.	50 Port Phillip.	10 West Kitty, £10½.
20 Frontino, 18s. 9d.	100 Parys Copper, 1s.	100 Wheal Coates, 2s. 6d.
		10 Wheal Crebor, 29s.
		20 Wheal Kitty, 12s. 9d.

MANY OF THE ABOVE SHARES WILL BE SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TEN OR TWENTY PER CENT.

Mr. COOKE has correspondents in every important city and town in England, whereby he can deal in Local Shares of every description.

Daily and Weekly Lists of Prices issued to clients on application.
ADVANCES MADE ON STOCKS AND SHARES.
Letters and Telegrams receive immediate personal attention.
BANKERS: ROYAL EXCHANGE (Limited), Cornhill, London.

MR. JAMES STOCKER, STOCKBROKER,
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1851.
BANKERS: LONDON AND WESTMINSTER.

STOCKS AND SHARES.

JOHN LENN AND CO.'S CIRCULAR, POST FREE, contains Highest, Lowest, Latest Prices of all Stocks and Shares, also shows the return per cent. at a glance.

JOHN LENN AND CO.'S CIRCULAR, POST FREE. The advice given in their former Circulars has enabled investors to make from 50 to 150 per cent. in a week.

JOHN LENN AND CO.'S CIRCULAR, POST FREE, contains special information respecting the safest investments obtainable, paying from 5 to 12½ per cent.

JOHN LENN AND CO. (LIMITED), STOCK AND SHARE DEALERS, 4 AND 5, GROCERS' HALL COURT, LONDON, E.C.

JOHN RISLEY, STOCK AND SHARE BROKER, AND MINING SHARE DEALER,
38, CORNHILL, LONDON, E.C.
ESTABLISHED 1860.
BANKERS: LONDON and WESTMINSTER, Lothbury, E.C.

MR. E. J. BARTLETT, STOCK AND SHARE DEALER,
30, GREAT ST. HELENS, LONDON, E.C.
Selected List of Investments post free on application.

MESSRS. ENDEAN AND CO., STOCK AND SHARE DEALERS, 85, GRACECHURCH STREET, LONDON, E.C.
ESTABLISHED 1862.
BANKERS: LONDON AND WESTMINSTER, Lothbury, E.C.

MR. W. B. COBB, 29, BISHOPSGATE STREET WITHIN, LONDON.
Special information and business in all mines in the United States of Colombia—Tolima, Western Andes, Colombian, and other gold and silver mines in that country.
In direct communication each mail with the highest mining authority in Colombia, through whose private advices I am able to give most valuable information as to mines in the Tolima district, and other mines in the country.

PROFITABLE INVESTMENTS.
TRUST MORTGAGE AND INVESTMENT COMPANIES
PAYING FROM FIVE TO TEN PER CENT.
Further fall in the value of money. Reduction in the Bank rate. Reduction in the rates allowed on deposits.
FROM ABBOTT, PAGE, AND CO.'S SPECIAL ISSUE.
STOCKBROKERS,
42, POULTRY, LONDON, E.C.
Complete Copy, with Monthly (July) Circular, sent post free on application.

CARN CAMBORNE TIN AND COPPER MINING COMPANY (LIMITED).
A splendid opportunity is now afforded to investors to buy shares in the above mine at advertised prices. Carn Camborne adjoins Dolcoath, which has yielded over £2,000,000 in dividends. The lode in the 95 level is 24 ft. wide, a splendid lode for making rich deposits of ore in depth. A winze is being sunk below the 95 to communicate with the 105 level, and indications are again favourable for meeting with a valuable discovery.
We are not sellers of these shares at any price; but will execute orders sent us to buy shares at advertised or quoted prices if obtainable. We have orders on hand to buy a large number of shares at low prices, but cannot obtain them; this proves that shares are firmly held.
Buyers should insist upon the delivery of shares on transfer, duly certified by the secretary, before paying for them, as we understand that shares sold recently at low prices are not being delivered.
ENDEAN AND CO., STOCK AND SHARE DEALERS,
85, GRACECHURCH STREET, LONDON, E.C.

FERDINAND R. KIRK, STOCKBROKER,
5, BIRCHIN LANE, LONDON, E.C.
SPECIAL BUSINESS in the following:—

90 Akankoo, 8s. 9d.	200 Chontales, 4s. 3d.	90 Old Shepherds, 10s.
50 Antioquia, 3s. 6d.	160 Colombian Hyd., 8s.	60 Organos, 14s.
100 Bratsberg, £1 9s.	40 Devon Consols, £2 19	100 Orita, 22s. 6d.
60 California Gold, 13s.	80 Devon Friend., 1s. 9d	150 Oscar Gold, 13s.
130 Callao Bis, 7s. 6d.	70 East Wheal Rose, 8s 6	80 Prince of Wales, 4s 6d
50 Carn Camborne.	50 Eberhardt, 4s.	70 South Darren, 4s.
110 Cartago, 10s.	150 Kapanga, 3s. 3d.	60 West Callao, 4s.
130 Chile, 3s.	40 Mysore Gold, 8s. 6d.	50 Wheal Crebor, £1⅜.

Fortnightly accounts opened in Home Railways, Foreign Bonds, American and Canadian Railways, on receipt of the usual cover.

MR. CHARLES THOMAS,
MINING AGENT AND ENGINEER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MR. ALFRED THOMAS,
MINING ENGINEER, AND STOCK AND SHARE DEALER,
10, COLEMAN STREET, LONDON E.C.

ESTABLISHED 1852.
MR. HENRY J. TALLENTIRE,
STOCK BROKER AND MINING SHARE DEALER.
SPECIAL BUSINESS in all Home and Foreign Mines at close prices.
SEPTEMBER CIRCULAR on application, containing valuable information and advice to Investors, post free.
SHARES SOLD for forward delivery in one to three months upon usual deposit.
OFFICES—21, THREADNEEDLE STREET, LONDON, E.C.
BANKERS: CITY BANK, Threadneedle-street, E.C..

MR. J. GRANT MACLEAN,
SHAREBROKER AND IRONBROKER, STIRLING, N.B.,
Refers to his Share Market Report on page 1010 of to-day's Journal.

MR. W. TREGELLAS, 40, BISHOPSGATE STREET WITHIN, E.C.,
Deals in all descriptions of STOCKS and SHARES at close market prices.

JOHN B. REYNOLDS, STOCK AND SHARE DEALER,
37 WALBROOK, LONDON, E.C.
Established Twenty-five Years.
BANKERS: LONDON JOINT-STOCK.

WEST KITTY, TREVAUNANCE, AND NEW KITTY.
For prospect of trade, tin markets, management of mines, rich districts, &c., see verbatim reports of meetings of these companies, recently held, supplied gratis on application to Mr. Reynolds.
300 per cent. per annum on capital as the result of investments recommended by Mr. Reynolds, and other particulars. See Mr. Reynolds's "Facts and Figures," also supplied gratis on application to him.
The present is a very opportune moment for the investment of money in securities of all descriptions.
Mr. Reynolds is a buyer of any part of 1000 Polberro shares at 30s each, and is a seller of a limited number to any of his customers at 35s. each. Dealers are offering 2s. per share for the option of buying Polberros in two years hence at £7 10s. each.
Mr. Reynolds is also a buyer of Wheal Coates shares. Correspondents will kindly state number and lowest price for cash.
Mr. Reynolds transacts business with promptitude at net prices for cash only.
POLBERRO, ST. AGNES.
The shares of this mine are in favour, and will advance probably to a very high figure. The mine has been inspected by gentlemen who are well known, and whose opinions are universally respected. Mr. REYNOLDS will be happy to furnish the particulars of their report, and to give to his correspondents any information in his power. The books of the company and all other particulars are open for inspection at the company's offices. The management is the same as that of West Kitty, and the property promises to be of a very high order. Mr. REYNOLDS directs attention to the fact that those who have purchased the shares can already obtain a fair profit. Mr. REYNOLDS further directs attention to the fact of his having been the first to introduce West Kitty, under very similar circumstances to those which now characterise Polberro, St. Agnes, and Mr. REYNOLDS with equal confidence recommends the latter company's shares. West Kitty, with at present 12s. per share paid, returns 30s. per share per annum as a minimum dividend with every prospect of further increase. When West Kitty shares had only 2s. per share paid they were at a premium of £2 each.

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C (Established 30 Years),
Can SELL the following SHARES:—

50 Akankoo, 9s. 3d.	45 Great Holway, 9s. 9d.	20 Panulcillo, £3 15s.
100 Almada, 4s. 9d.	50 Hoover Hill, 4s.	100 Port Phillip, 2s. 6d.
40 Birdseye Creek, 11s6d	75 Kapanga, 3s. 3d.	20 Prince of Wales, 5s 6
20 Bratsberg, £1 10s.	10 Leadhills, £1 12s. 3d.	25 Potosi, 8s. 6d.
30 California Gold, 12s9d	100 La Plata, 5s.	10 Roman Gravels, £3¾.
75 Callao Bis, 7s. 3d.	30 Lisbon-Berlyn, 11s.	30 Ruby, 17s. 6d.
100 Chile Gold, 3s. 3d.	25 Marke Valley, 12s. 6d.	10 Richmond, £3 12s. 6d.
90 Chontales, 3s. 6d.	30 Mounts Bay, 3s. 6d.	40 South Darren, 4s.
50 Coed-y-Fedw, 12s. 6d.	20 Montana, 41s.	10 Tincroft, £6 15s.
50 Devon Friend., 2s.6d.	5 Mona, 15s.	20 Uni. Mexican, £3 2s 6
40 Don Pedro, 3s. 9d.	150 Nouveau Monde, 2s.	75 Victoria, 6s. 6d.
20 East Blue Hills, 5s.	20 Organos Gold, 15s 6d	40 Wheal Coates, 2s. 6d
20 East Rose, 8s.	25 Oscar Gold, 10s. paid, 14s.	20 Wheal Crebor, £1 10s
25 Frontino, 16s. 3d.		10 Western Andes Gold.
25 Gorsedd, 2s.	25 Old Shepherds, 9s. 9d.	20 West Kitty, £10 3s 9

BUYER of 10 Minera, 100 Colombian Hydraulic, 40 Orita, and 10 Tolima A and B, and 50 Carn Camborne.
PURCHASES FOR FORWARD DELIVERY AT SPECIAL PRICES ON RECEIPT OF DEPOSIT OF 20 PER CENT.
BANKERS: ALLIANCE BANK Limited.

HORACE J. TAYLOR,
38, GREAT ST. HELEN'S, LONDON, E.C.,
STOCK, MINING, AND MISCELLANEOUS DEALER.
ESTABLISHED 1874.
BANKERS: CENTRAL BANK OF LONDON (Limited).
SPECIAL BUSINESS in the following:—

Akankoo, 9s. 3d.	Frontino, 16s. 3d.	Organos, 13s. 6d.
Bratsberg, 29s. 6d.	Gunnislake (Clitters), 9s. 9d.	Port Phillip, 2s. 6d.
Colombian Hydraulic		Panulcillo, 75s.
California Gold, 13s.	Home Mns. Trst. 17s.	Potosi, 8s. 6d.
Callao Bis, 8s.	Leadhills, 33s.	Ruby, 15s. 6d.
Chile Gold, 3s. 9d.	La Plata, 5s.	Richmond, 63s. 9d.
Chontales, 3s. 9d.	Lisbon-Berlyn, 10s. 3d	Roman Gravels, 65s.
Colorado, 38s.	Marke Valley, 11s. 3d	South Devon, 5s.
Devon Consols, 53s. 9	Mounts Bay, 3s. 6d.	United Mexican, 63s.
Devon Friendship, 2s	Montana, 38s. 9d.	West Crebor, 1s. 6d.
East Blue Hills, 5s.	New W. Caradon, 3s 6	Wheal Crebor, 27s. 6d
East Wheal Rose, 8s.	Old Shepherds, 9s. 9d	Wh. Grenville, £5¼.
Flagstaff, 1s.	Oritas, 24s.	West Godolphin, 12s 6
		Western Andes, £5¼.

BUYER of Tolima A and B, Western Andes, Colombian, Oritas, and all mining shares whose mines are situated in the United States of Colombia.
Early information from a special and reliable authority can be given on application as to these mines

CARN CAMBORNE, AND ADVERTISED PRICES.—The statements made by Messrs. ENDEAN and Co. under the above heading in last week's Journal are inaccurate. Mr. A. ENDEAN came into the market on the afternoon of the 19th inst., and asked me if I was a seller of Carn Cambornes. I replied by offering the shares at 12s. 6d., which he repeatedly refused to buy. During the morning I dealt at 2s. 6d. with a Stock Exchange jobber, and told Mr. ENDEAN so.
I am still a seller of Carn Camborne shares to the public, and may add in no case have I charged a client above 2s. 9d. during this month.
SAMUEL JAMES, STOCK BROKER AND MINING SHARE DEALER,
14, ANGEL COURT, E.C.
Dated 25th August, 1884.

BRITISH ASSOCIATION FOR ADVANCEMENT OF SCIENCE.

THE MONTREAL MEETING.

The enormous natural resources of Canada—its immense mineral wealth, and almost unequalled facilities for industrial and commercial development—have constantly been referred to in the *Mining Journal;* and it has as often been remarked that as regards mining and general industry, the Canadians are excessively slow and so chronically unspeculative—perhaps from the very riches of their country—that many of the most prosperous and promising undertakings are in the hands of Americans and Englishmen. That far more English capital would find remunerative employment in the Dominion if Englishmen and Canadians were brought more frequently into contact, has long been felt by the more energetic on both sides of the Atlantic, and by these the Montreal meeting of the British Association has been looked forward to with the utmost possible interest. Their most sanguine hopes are likely to be fully realised. The Canadians were determined to make the gathering a success, and they will do so. Hospitable almost beyond description, proud of their country, and devotedly attached to the Old Country, and all belonging to it, a more agreeable set of hosts could not be found, and in this particular case the hospitality is, to be candid, not entirely disinterested. It is felt that the mutual interchange of opinions and good feeling will make Canada so much better known to the world, and cause her great resources to be so much more widely appreciated, that the entire Dominion will reap the advantage of the more free employment of capital in opening mines, constructing railways, and carrying out various other enterprises, which will certainly yield handsome profit to those engaged in them.

Nearly 350 years have elapsed since Montreal was first partially settled by Europeans, and its position has secured it advantages of which few other cities in the Dominion can boast. Its beautiful harbour is at the commencement of the Lake navigation, and it has direct railway communication with all parts of Canada and the United States. Its engineering factories include works engaged in ironfounding, the manufacture of locomotives, marine, and land engines, steam-boiler works, agricultural implement, file and nail factories, and others, whilst its general industrial establishments are on a very large scale. Its three miles of wharfage accommodation is utilised by vessels from sea, reaching about 500,000 tons annually, while the annual tonnage of the vessels engaged in inland navigation may be estimated at 1,000,000 tons. It has about 60 churches, of which one-third are Roman Catholic, and half-a-dozen colleges—Montreal College, founded by the Sulpicians more than a century since, Church of England, Wesleyan, and Presbyterian Theological Colleges, the Jesuit College of St. Mary, and the widely celebrated McGill College, which is Protestant but not denominational, and has among its alumni some of the best men of which the Dominion can boast. It is this latter college which is the chief seat of the British Association for the advancement of Science during the present meeting. The buildings are all that could be desired for such a purpose and the proceedings commenced on Wednesday evening. Everything possible has been done to make the meeting enjoyable, and as a fund of 8000*l.* has been raised to meet expenses, it is evident it is intended to give members all the pleasure within reach. A Reuter's telegram states at a meeting of the Council, on Wednesday, Admiral Ommanney stated that 765 members had already arrived. The hotels are full, but the Chairman of the local committee, Mr. Charles Garth, has been careful to make arrangements to prevent their being put to inconvenience and to insure their comfortable location. The Times correspondent states that 700 new members from Canada and the United States have been enrolled, and as it is the height of the American tourist season there is a large influx of visitors. Mayor Beaudry, with the City Corporation of Montreal, yesterday at Queen's Hall presented an address to the President and members of the Association, a large number of whom were present. In the address, which offered a hearty welcome to the visitors not only at Montreal, but also throughout the length and breadth of the Dominion, which regards the coming of the Association as an event of deep and manifold importance, it was remarked that the corporation cannot fail to perceive that Canada will gain by the presence of observers and thinkers so exact and so unprejudiced. In this great stretch of diversified region between the Atlantic and the Pacific the student of almost every branch of science must find something worth learning. This broad Dominion affords various and ample scope for research, while to the student of man there is an opportunity to acquire fresh knowledge. In this young Commonwealth you will find a people not unworthy of the great races whence it sprang. We place our land, ourselves, all we are and have at your disposal. We bid you hearty welcome, sincerely hoping that your stay may be as happy and fruitful to the Association as it is grateful to the people of Montreal and of the Dominion.

The character of the reception may be judged of from a single sentence in the Montreal Daily Star:—If we challenge them to find the limits of Canadian hospitality it is no ostentatious spirit. We pay special honour to this distinguished body of observers, thinkers, experimenters, and explorers, in the first place, because it has done us a signal honour in selecting our city for its first meeting held beyond the limits of the British Isles. We are glad to think that while the holding of the meeting of 1884 in Montreal is an unmixed blessing to ourselves, the movement will also tend to the profit of our guests themselves, and to the advantage of the cause which they even more than we have at heart—the advancement of science. On this continent they will meet a body of scientific workers second only to their own Association in importance. In Canada they will see much which cannot fail to suggest new lines of thought, new fields of research, admirable in conception, aim, and working. The British Association marks the democracy of knowledge, the beneficence of science, and the value of patient search for truth.

The real business of the meeting, of course, commenced with the transfer of the chair, and the reading of the new President's inaugural address. The Governor-General of Canada (the Marquis of Lansdowne) introduced the President, Lord Rayleigh, Professor of Experimental Physics in the University of Cambridge, and from the Times telegraphic report of the speech the subjoined abstract is taken. The Governor-General arrived from Quebec early on Wednesday, and later in the day the Council of the Association completed its report, which was submitted to the general committee, and states that a new section has been formed for Anthropology, and that the alteration of the rules necessary to give effect to the recommendations for the affiliation of local scientific societies will be deferred until the general committee meets in London, on Nov. 11. Then, also, the President, officers, and council for the next year will be chosen, the date of the 1885 meeting decided on, and the place of meeting for 1886. The first general meeting of the Association was held this evening in Queen's Hall, which accommodates about 1600 people, and was crowded. This meeting was confined to British, Canadian, and American members, it being found impossible to admit the public, there was such a great pressure for admission. Lord Lansdowne (the Governor-General), Mayor Beandry, of Montreal, Lord Rayleigh, and other officers of the Association filled the platform. In the absence of Prof. Cayley, the outgoing president, Sir W. Thomson temporarily occupied the chair.

In introducing Lord Rayleigh, the GOVERNOR-GENERAL remarked that this is the first occasion on which the British Association has held its meeting beyond the narrow limits of the United Kingdom. This, though an innovation, is certainly not inconsistent with the objects of the Association and the designs of its founders. It was instituted for the promotion of intercourse between those who cultivated science in different parts not merely of the British Islands, but of the British Empire. I question whether any means for this purpose could have been discovered more effectual than holding your annual meeting in one of the great cities of this colony. We may claim for Canada that she has done her best, and has spared no pains to provide for the interests of science in the future. She has scientific workers known and respected far beyond the bounds of their own nation. Lord Lansdowne spoke warmly of the honour conferred upon Principal Sir J. Dawson, who is more responsible than any other single person for the Association's visit. We regard, he said, the knighthood Her Majesty has bestowed upon him as an appropriate recognition of his distinguished services, and an opportune compliment to Canadian science. But the significance of this meeting is far greater than if measured merely by the addition it will make to the Empire's scientific wealth. When we find a society which for 50 years has not met outside the British Islands transferring its operations to the Dominion; when we see several hundreds of the best known Englishmen arriving, mingling with our citizens, and dispersing over this continent; when we see in Montreal the bearers of such names as Rayleigh, Playfair, Frankland, Sanderson, Thomson, Roscoe, Blanford, Moseley, Lefroy, Temple, Bramwell, Tylor, Galton, Harcourt, and Bonney, we feel one more step has been taken towards the establishment of that closer intimacy between the Mother Country and her offspring, which both here and at home all good citizens of the Empire are determined to promote. Recent events show a remarkable awakening to the importance of the noblest colonial Empire the world has ever seen, a desire to draw closer the ties of sympathy and allegiance, whatever difficulty may be in the way of revision of the political relations of the Mother Country and the colonies, it is satisfactory to reflect that there is none in the way of such alliance as that which you are establishing to-day between the culture of the Old World and the New. I believe, Lord Rayleigh, your visit will be fraught with far-reaching advantages both to hosts and guests; we shall gain an acquaintance with our visitors in the publicity their visit gives to the resources and attractions of this country. Everywhere there are objects of interest; our political system, our education, railways pushed across the continent with an enterprise never surpassed by the oldest and largest communities of our guests; our geology, our agriculture, the history of the native races, all afford objects of study. I need not speak of the facilities afforded to make your visit agreeable. A distinguished member of the Assembly to which you and I, Lord Rayleigh, have the honour to belong, has recently cautioned the British public against the danger of legislation by picnic. In some quarters I hear misgivings had been expressed lest we, too, be exposed to a similar danger, lest the attractions offered to the British Association here should conflict with its more strictly scientific objects.

That it would have been an immense gratification to Prof. Cayley to have introduced his successor there can be no doubt, and the remarks of the representative were, therefore, especially appropriate. Sir WILLIAM THOMSON said:—It would have been a well-earned pleasure for my friend, Prof. Cayley, had he been able to visit Montreal to introduce Lord Rayleigh to-night as his successor in the office of President of the British Association. Prof. Cayley has devoted his life to the advancement of pure mathematics, and it is peculiarly appropriate that he should be followed in his honourable post by one who has made the brilliant applications of mathematical power to the discovery and illustration of natural phenomena with which Lord Rayleigh has enriched physical science. Lord Rayleigh's optical researches are of great value—notably his profound and searching mathematical investigation of the blue sky, and the polarisation of light by reflection. His book on "Sound" is the greatest and most important work which has yet appeared on the subject. His determination of the Ohm, which constitutes the accurate foundation for the great modern science of electrical measurement, is of supreme importance not only in the scientific laboratory, but in all practical applications of electricity, as in the telegraph cable factory and the signalling station, in electrical engineering works, in every practical application of electric light, electro-metallurgy, and the electric transmission of power. With much pleasure I resign the chair for Prof. Cayley, and introduce Lord Cayley as President of the British Association.

Although less popular in its character than some which have been delivered, the Presidential address of Lord Rayleigh was by no means wanting in interest to the general hearer; it is a lucid and careful record of progress, and is certainly not so excessively dry as the discourse of last year; and it must not be forgotten that the peculiar circumstances of the meeting—being held away from Great Britain, and in a colony in which pure science, to speak truly, holds but a secondary position—materially limited his lordship's field for remark; yet he performed his task in a manner which cannot fail to be very gratifying to the Canadians and Americans, and highly conducive to the honour of the Association. In the course of his address he said:—When it was first proposed to visit Canada there were some who viewed the project with hesitation. For my own part, I never quite understood the grounds of their apprehension. Perhaps they feared the thin edge of the wedge. When once the principle was admitted, there was no knowing to what it might lead. But whatever objections may have at first been felt, some were outweighed by the consideration of the magnificent opportunities which your hospitality affords of extending the sphere of our influence, and of becoming acquainted with a part of the Queen's dominion which, associated with splendid memories of the past, is advancing daily by leaps and bounds to a position of importance such as not long ago was scarcely dreamed of. For myself, I am not a stranger to your shores. I remember well the impression made on me 17 years ago by the wild rapids of the St. Lawrence and the gloomy grandeur of the Saguenay. If anything impressed me more it was the kindness with which I was received by yourselves, and which, I doubt not, will be again extended, not merely to myself, but to all the English members of the Association. I am confident that those who have made up their minds to cross the ocean will not repent their decision, and that, apart altogether from scientific interests, great advantages may be expected from this visit. We Englishmen ought to know more than we do of matters relating to the Colonies, and anything which tends to bring the various parts of the Empire into closer contact can hardly be overvalued. It is pleasant to think that this Association is the means of furthering an object which should be dear to the hearts of all of us, and I venture to say that a large proportion of the visitors to this country will be astonished by what they see, and will carry home an impression which time will not readily efface.

For many years Sir W. Siemens has been a regular attendant at our meetings, and to few, indeed, have they been more indebted for success. Whatever the occasion, in his presidential address of two years ago, or in communications to the Physical and Mechanical Sections, he had always new and interesting ideas, put forward in language which a child could understand, so great a master was he of the art of lucid statement in his adopted tongue. "Practice with Science" was his motto. Deeply engaged in industry, and conversant all his life with engineering operations, his opinion was never that of a mere theorist. On the other hand, he abhorred rule of thumb, striving always to master the scientific principles which underlie rational design and invention. It is not necessary that I should review in detail the work of Siemens. The part which he took during recent years in the development of the dynamo machine must be known to many of you. We owe to him the practical adoption of the method, first suggested by Wheatstone, of throwing into a shunt the coils of the field magnets, by which a greatly improved steadiness of action is obtained. The same characteristics are observable throughout—a definite object in view and well-directed perseverance in overcoming the difficulties by which the path is usually obstructed. These are, indeed, the conditions of successful invention. The world knows little of such things, and regards the new machine or the new method as the immediate outcome of a happy idea. Probably, if the truth were known, we should see that in nine cases out of ten success depends as much upon good judgment and perseverance as upon fertility of imagination. The labours of our great inventors are not unappreciated, but I doubt whether we adequately realise the enormous obligations under which we lie. It is no exaggeration to say that the life of such a man as Siemens is spent in the public service, the advantages which he reaps for himself being as nothing in comparison with those which he confers upon the community at large.

As it is now several years since your presidential chair has been occupied by a professed physicist, it may naturally be expected that I should attempt some record of recent progress in that branch of science, if, indeed, such a term be applicable. For it is one of the difficulties of the task that subjects as distinct as mechanics, electricity, heat, optics, and acoustics, to say nothing of astronomy and meteorology, are included under physics. Any one of these may well occupy the lifelong attention of a man of science, and to be thoroughly conversant with all of them is more than can be expected of any one individual, and is probably incompatible with the devotion of much time and energy to the actual advancement of knowledge. Not that I would complain of the association sanctioned in common parlance. A sound knowledge of at least the principles of general physics is necessary to the cultivation of any department. The predominance of the sense of sight as the medium of communication with the outer world brings with it dependence upon the science of optics; and there is hardly a branch of science in which the effects of temperature have not (often without much success) to be reckoned with. Besides, the neglected borderland between two branches of knowledge is often that which best repays cultivation, or, to use a metaphor of Maxwell's, the greatest benefits may be derived from a cross fertilisation of the sciences. The wealth of material is an evil only from the point of view of one of whom too much may be expected. Another difficulty incident to the task, which must be faced, but cannot be overcome, is that of estimating rightly the value, and even the correctness, of recent work. It is not always that which seems at first the most important that proves in the end to be so. The history of science teems with examples of discoveries which attracted little notice at the time, but afterwards have taken root downwards and borne much fruit upward.

The dynamo machine is indeed founded upon discoveries of Faraday, now more than half a century old; but it has required the protracted labours of many inventors to bring it to its present high degree of efficiency. Looking back at the matter, it seems strange that progress should have been so slow. I do not refer to details of design, the elaboration of which must always, I suppose, require the experience of actual work to indicate what parts are structurally weaker than they should be, or are exposed to undue wear and tear. But with regard to the main features of the problem, it would almost seem as if the difficulty lay in want of faith. Long ago it was recognised that electricity derived from chemical action is (on a large scale) too expensive a source of mechanical power, notwithstanding the fact that (as proved by Joule in 1846) the conversion of electricity into mechanical work can be effected with great economy. From this it is an evident consequence that electricity may advantageously be obtained from mechanical power; and one cannot help thinking that if the fact had been borne steadily in mind the development of the dynamo might have been much more rapid. But discoveries and inventions are apt to appear obvious when regarded from the standpoint of accomplished fact; and I draw attention to the matter only to point the moral that we do well to push the attack persistently when we can be sure beforehand that the obstacles to be overcome are only difficulties of contrivance, and that we are not vainly fighting unawares against a law of Nature. The present development of electricity on a large scale depends, however, almost as much upon the incandescent lamp as upon the dynamo. The success of these lamps demands a very perfect vacuum—not more than about one-millionth of the normal quantity of air should remain—and it is interesting to recall that 20 years ago such vacua were rare even in the laboratory of the physicist. It is pretty safe to say that these wonderful results would never have been accomplished had practical applications alone been in view. The way was prepared by an army of scientific men, whose main object was the advancement of knowledge, and who could scarcely have imagined that the processes which they elaborated would soon be in use on a commercial scale, and entrusted to the hands of ordinary workmen. When I speak in hopeful language of practical electricity I do not forget the disappointment within the last year or two of many over-sanguine expectations. The enthusiasm of the inventor and promoter is necessary to progress, and it seems to be almost a law of Nature that it should over-pass the bounds marked out by reason and experience. What is the most to be regretted is the advantage taken by speculators of the often uninstructed interest felt by the public in novel schemes by which its imagination is fired. But looking forward to the future of electric lighting we have good ground for encouragement.

Just as in former days the science received a stimulus from the application to telegraphy, under which everything relating to measurement on a small scale acquired an importance and development for which we might otherwise have had long to wait, so now the requirements of electric lighting are giving rise to a new development of the art of measurement upon a large scale, which cannot fail to prove of scientific as well as practical importance. Mere change of scale may not at first appear a very important matter, but it is surprising how much modification it entails in the instruments and the processes of measurement. For instance, the resistance coils on which the electrician relies in dealing with currents whose maximum is a fraction of an ampère, fail altogether when it becomes a question of hundreds, not to say thousands, of ampères. The powerful currents which are now at command constitute almost a new weapon in the hands of the physicist. Effects, which in old days were rare and difficult of observation, may now be produced at will on the most conspicuous scale. Consider for a moment Faraday's great discovery of the magnetisation of light, which Tyndall likens to the Weisshorn among mountains, as high, beautiful, and alone. This judgment (in which I fully concur) relates to the scientific aspect of the discovery, for to the eye of sense nothing could have been more insignificant. It is even possible that it might have alluded altogether the penetration of Faraday, had he not been provided with a special quality of very heavy glass. At the present day these effects may be produced upon a scale that would have delighted their discoverer, a rotation of the plane of polarisation through 180° being perfectly feasible.

It has long been known that when the changes [in the Gramme and similar machines] are sufficiently rapid, the phenomena are governed much more by induction, or electric inertia, than by mere resistance. On this principle much may be explained that would otherwise seem paradoxical. To take a comparatively simple case, conceive an electro-magnet wound with two contiguous wires, upon which acts a given rapidly periodic electro-motive force. If one wire only be used, a certain amount of heat is developed in the circuit. Suppose now that the second wire is brought into operation in parallel—a proceeding equivalent to doubling the section of the original wire. An electrician accustomed only to constant currents would be sure to think that the heating effect would be doubled by the change, as much heat being developed in each wire separately as was at first in the single wire. But such a conclusion would be entirely erroneous. The total current, being governed practically by the self-induction of the circuit, would not be augmented by the accession of the second wire, and the total heating effect, so far from being doubled, would, in virtue of the superior conductivity, be halved. During the last few years much interest has been felt in the reduction to an absolute standard of measurement of electro-motive force, current, resistance, &c., and to this end many laborious investigations have been undertaken. The subject is one that has engaged a good deal of my own attention, and I should naturally have felt inclined to dilate upon it, but that I feel it to be too abstruse and special to be dealt with in detail upon an occasion like the present. The beautiful and mysterious phenomena attending the discharge of electricity in nearly vacuous spaces have been investigated, and in some degree explained, by De la Rue, Crookes, Schuster, Moulton, and the lamented Spottiswoode, as well as by various able foreign experimenters. In a recent research Crookes has sought the origin of a bright citron-coloured band in the phosphorescent spectrum of certain earths, and, after encountering difficulties and anomalies of a most bewildering kind, has succeeded in proving that it is due to yttrium, an element much more widely distributed than had been supposed. A conclusion like this is stated in a few words, but those only who have undergone similar experience are likely to appreciate the skill and perseverance of which it is the final reward.

Without doubt the most important achievement of the older generation of scientific men has been the establishment and application of the great laws of thermo-dynamics, or, as it is often called, the mechanical theory of heat. The first law, which asserts that heat and mechanical work can be transformed one into the other at a certain fixed rate, is now well understood by every student of physics, and the number expressing the mechanical equivalent of heat resulting from the experiments of Joule, has been confirmed by the

searches of others, and especially of Rowland. But the second law, which practically is even more important than the first, is only now beginning to receive the full appreciation due to it. One reason of this may be found in a not unnatural confusion of ideas. Words do not always lend themselves readily to the demands that are made upon them by a growing science, and I think that the almost unavoidable use of the word equivalent in the statement of the first law is partly responsible for the little attention that is given to the second. For the second law so far contradicts the usual statement of the first as to assert that equivalents of heat and work are not of equal value. While work can always be converted into heat, heat can only be converted into work under certain limitations. For every practical purpose the work is worth the most, and when we speak of equivalents, we use the word in the same sort of special sense as that in which chemists speak of equivalents of gold and iron. The second law teaches us that the real value of heat as a source of mechanical power depends upon the temperature of the body in which it resides; the hotter the body in relation to its surroundings the more available the heat. In order to see the relations which obtain between the first and the second law of thermo-dynamics it is only necessary for us to glance at the theory of the steam-engine. Not many years ago calculations were plentiful, demonstrating the inefficiency of the steam-engine on the basis of a comparison of the work actually got out of the engine with the mechanical equivalent of the heat supplied to the boiler. Such calculations took into account only the first law of thermo-dynamics, which deals with the equivalents of heat and work, and have very little bearing upon the practical question of efficiency, which requires us to have regard also to the second law. According to that law the fraction of the total energy which can be converted into work depends upon the relative temperatures of the boiler and condenser, and it is therefore manifest that, as the temperature of the boiler cannot be raised indefinitely, it is impossible to utilise all the energy which, according to the first law of thermo-dynamics, is resident in the coal. On a sounder view of the matter the efficiency of the steam-engine is found to be so high that there is no great margin remaining for improvement. The higher initial temperature possible in the gas-engine opens out much wider possibilities, and many good judges look forward to the time when the steam-engine will have to give way to its younger rival.

The laws of motion in capillary tubes, discovered experimentally by Poiseuille, are in complete harmony with theory. The resistance varies as the velocity, and depends in a direct manner upon the constant of viscosity. But when we come to the larger pipes and higher velocities with which engineers usually have to deal, the theory which presupposes a regularly stratified motion evidently ceases to be applicable, and the problem becomes essentially identical with that of skin friction in relation to ship propulsion. Professor Reynolds has traced with much success the passage from the one state of things to the other, and has proved the applicability under these complicated conditions of the general laws of dynamical similarity as adapted to viscous fluids by Professor Stokes. In spite of the difficulties which beset both the theoretical and experimental treatment, we may hope to attain before long to a better understanding of a subject which is certainly second to none in scientific as well as practical interest. As also closely connected with the mechanics of viscous fluids, I must not forget to mention an important series of experiments upon the friction of oiled surfaces recently executed by Mr. Tower for the Institution of Mechanical Engineers. The results go far towards upsetting some ideas hitherto widely admitted. When the lubrication is adequate, the friction is found to be nearly independent of the load, and much smaller than is usually supposed, giving a coefficient as low as 1-1000. When the layer of oil is well formed the pressure between the solid surfaces is really borne by the fluid, and the work lost is spent in shearing—that is, in causing one stratum of the oil to glide over another. In order to maintain its position the fluid must possess a certain degree of viscosity proportionate to the pressure; and even when this condition is satisfied it would appear to be necessary that the layer should be thicker on the ingoing than on the outgoing side. We may, I believe, expect from Professor Stokes a further elucidation of the processes involved. In the meantime it is obvious that the results already obtained are of the utmost value, and fully justify the action of the Institution in devoting a part of its resources to experimental work. We may hope, indeed, that the example thus widely set may be followed by other public bodies associated with various departments of industry. In optics attention has naturally centred upon the spectrum. The mystery attaching to the invisible rays lying around the red has been fathomed to an extent that, a few years ago, would have seemed almost impossible. By the use of special photographic methods Abney has mapped out the peculiarities of this region with such success that our knowledge of it begins to be comparable with that of the parts visible to the eye. One of the most startling of Langley's conclusions relates to the influence of the atmosphere in modifying the quality of solar light. By the comparison of observations made through varying thicknesses of air, he shows that the atmospheric absorption tells most upon the light of high refrangibility; so that, to an eye situated outside the atmosphere, the sun would present a decidedly bluish tint. It would be interesting to compare the experimental numbers with the law of scattering of light by small particles given some years ago as the result of theory. The demonstration by Langley of the inadequacy of Cauchy's law of dispersion to represent the relation between refrangibility and wave-length in the lower part of the spectrum must have an important bearing upon optical theory. The investigation of the relation of the visible and ultra-violet spectrum to various forms of matter has occupied the attention of a host of able writers, among whom none have been more successful than my colleagues at Cambridge, Professors Liveing and Dewar. The subject is too large both for the occasion and for the individual, and I must pass it by.

The beautiful inventions of the telephone and the phonograph, although in the main dependent upon principles long since established, have imparted a new interest to the study of acoustics. The former, apart from its uses in every-day life, has become in the hands of its inventor, Graham Bell, and of Hughes, an instrument of first-class scientific importance. The theory of its action is still in some respects obscure, as is shown by the comparative failure of the many attempts to improve it. In connection with some explanations that have been offered, we do well to remember that molecular changes in solid masses are inaudible in themselves, and can only be manifested to our ears by the generation of a to-and-fro motion of the external surface extending over a sensible area. If the surface of a solid remains undisturbed our ears can tell us nothing of what goes on in the interior. In theoretical acoustics progress has been steadily maintained, and many phenomena which were obscure 20 or 30 years ago have since received adequate explanation. If some important practical questions remain unsolved one reason is that they have not yet been definitely stated. Almost everything in connection with the ordinary use of our senses presents peculiar difficulties to scientific investigation. Some kinds of information with regard to their surroundings are of such paramount importance to successive generations of living beings that they have learned to interpret indications which, from a physical point of view, are of the slenderest character. Every day we are in the habit of recognising without much difficulty the quarter from which a sound proceeds, but by what steps we attain that end has not yet been satisfactorily explained. It has been proved that when proper precautions are taken we are unable to distinguish whether a pure tone (as from a vibrating tuning fork held over a suitable resonator) comes to us from in front or from behind. This is what might have been expected from an *à priori* point of view, but what would not have been expected is that with almost any other sort of sound, from a clap of the hands to the clearest vowel sound, the discrimination is not only possible but easy and instinctive. In these cases it does not appear how the possession of two ears helps us, though there is some evidence that it does, and even when sounds come to us from the right or left, the explanation of the ready discrimination which is then possible with pure tone is not so easy as might at first appear. We should be inclined to think that the sound was heard much more loudly with the ear that is turned towards than with the ear that is turned from it, and that in this way the direction was recognised. But if we try the experiment we find that, at any rate with notes near the middle of the musical scale, the difference of loudness is by no means so very great. The wave-lengths of such notes are long enough in relation to the dimensions of the head to forbid the formation of anything like a sound shadow in which the averted ear might be sheltered.

In concluding this imperfect survey of recent progress in physics I must warn you emphatically that much of great importance has been passed over altogether. I should have liked to speak to you of those far-reaching speculations especially associated with the name of Maxwell, in which light is regarded as a disturbance in an electromagnetic medium. Indeed, at one time I had thought of taking the scientific work of Maxwell as the principal theme of this address. But, like most men of genius, Maxwell delighted in questions too obscure and difficult for hasty treatment, and thus much of his work could hardly be considered upon such an occasion as the present. Maxwell's endeavour was always to keep the facts in the foreground, and to his influence, in conjunction with that of Thomson and Helmholtz, is largely due that elimination of unnecessary hypothesis which is one of the distinguishing characteristics of the science of the present day. In speaking unfavourably of superfluous hypothesis, let me not be misunderstood. Science is nothihg without generalisations. Detached and ill-assorted facts are only raw material, and in the absence of a theoretical solvent have but little nutritive value. At the present time, and in some departments, the accumulation of material is so rapid that there is danger of indigestion. By a fiction as remarkable as any to be found in law, what has once been published, even though it be in the Russian language, is usually spoken of as "known," and it is often forgotten that the rediscovery in the library may be a more difficult and uncertain process than the first discovery in the laboratory. In this matter we are greatly dependent upon annual reports and abstracts, issued principally in Germany, without which the search for the discoveries of a little known author would be well-nigh hopeless.

Much useful work has been done in this direction in connection with our association. Such critical reports as those upon hydrodynamics, upon tides, and upon spectroscopy, guide the investigator to the points most requiring attention, and in discussing past achievements contribute in no small degree to future progress. But though good work has been done, yet much remains to do. If, as is sometimes supposed, science consisted in nothing but the laborious accumulation of facts, it would soon come to a standstill, crushed as it were under its own weight. The suggestion of a new idea, or the detection of a law supersedes much that had previously been a burden upon the memory, and by introducing order and coherence facilitates the retention of the remainder in an available form. Those who are acquainted with the writings of the older electricians will understand my meaning when I instance the distance of Ohm's law as a step by which the science was rendered easier to understand and to remember. Two processes are thus at work side by side, the reception of new material and the digestion and assimilation of the old; and as both are essential we may spare ourselves the discussion of their relative importance. One remark, however, should be made. The work which deserves, but I am afraid does not always receive, the most credit is that in which discovery and explanation go hand in hand, in which not only are new facts presented, but their relation to old ones is pointed out. In making oneself acquainted with what has been done in any subject it is good policy to consult first the writers of highest general reputation. Although in scientific matters we should aim at independent judgment, and not rely too much upon authority, it remains true that a good deal must often be taken upon trust.

In estimating the present position and prospects of experimental science there is good ground for encouragement. The multiplication of laboratories gives to the younger generation opportunities such as have never existed before, and which excite the envy of those who have had to learn in middle life much that now forms part of an undergraduate course. As to the management of such institutions there is room for a healthy difference of opinion. For many kinds of original work, especially in connection with accurate measurement, there is need of expensive apparatus; and it is often difficult to persuade a student to do his best with imperfect appliances when he knows that by other means a better result could be attained with greater facility. Nevertheless, it seems to me important to discourage too great reliance upon the instrument maker. Much of the best original work has been done with the homeliest appliances; and the endeavour to turn to the best account the means that may be at hand developes ingenuity and resource more than the most elaborate determinations with ready-made instruments. There is danger otherwise that the experimental education of a plodding student should be too mechanical and artificial, so that he is puzzled by small changes of apparatus, much as many schoolboys are puzzled by a transposition of the letters in a diagram of Euclid. From the general spread of a more scientific education we are warranted in expecting important results. Just as there are some brilliant literary men with an inability, or at least a distaste practically amounting to inability, for scientific ideas, so there are a few with scientific tastes whose imaginations are never touched by merely literary studies. To save these from intellectual stagnation during several important years of their lives is something gained; but the thorough going advocates of scientific education aim at much more. To them it appears strange, and almost monstrous, that the dead languages should hold the place they do in general education; and it can hardly be denied that their supremacy is the result of routine rather than of argument. I do not myself take up the extreme position. I doubt whether an exclusively scientific training would be satisfactory; and where there is plenty of time and a literary aptitude I can believe that Latin and Greek may make a good foundation. But it is useless to discuss the question upon the supposition that the majority of boys attain either to a knowledge of the languages or to an appreciation of the writings of the ancient authors. The contrary is notoriously the truth, and the defenders of the existing system usually take their stand upon the excellence of its discipline.

In after life the intellectual energies are usually engrossed with business, and no further opportunity is found for attacking the difficulties which block the gateways of knowledge. Mathematics especially, if not learned young, are likely to remain unlearned. I will not further insist upon the educational importance of mathematics and science, because with respect to them I shall probably be supposed to be prejudiced. But of modern languages I am ignorant enough to give value to my advocacy. I believe that French and German, if properly taught, which I admit they rarely are at present, would go far to replace Latin and Greek from a disciplinary point of view, while the actual value of the acquisition would in the majority of cases be incomparably greater. In half the time usually devoted, without success, to the classical languages most boys could acquire a really serviceable knowledge of French and German. History and the serious study of English literature, now shamefully neglected, would also find a place in such a scheme. There is one objection often felt to a modernised education as to which a word may not be without use. Many excellent people are afraid of science as tending towards materialism. That such apprehension should exist is not surprising, for unfortunately there are writers, speaking in the name of science, who have set themselves to foster it. It is true that among scientific men, as in other classes, crude views are to be met with as to the deeper things of Nature; but that the lifelong beliefs of Newton, of Faraday, and of Maxwell are inconsistent with the scientific habit of mind is surely a proposition which I need not pause to refute. It would be easy, however, to lay too much stress upon the opinions of even such distinguished workers as these. Men who devote their lives to investigation cultivate a love of truth for its own sake, and endeavour instinctively to clear up, and not, as is too often the object in business and politics, to obscure a difficult question. So far the opinion of a scientific worker may have a special value, but I do not think that he has a claim superior to that of other educated men to assume the attitude of a prophet. In his heart he knows that underneath the theories that he constructs there lie contradictions which he cannot reconcile. The higher mysterics of being, if penetrable at all by human intellect, require other weapons than those of calculation and experiment. Without encroaching upon grounds appertaining to the theologian and the philosopher, the domain of natural science is surely broad enough to satisfy the wildest ambition of its devotees. In other departments of human life and interest true progress is rather an article of faith than a rational belief; but in science a retrograde movement is, from the nature of the case, almost impossible. Increasing knowledge brings with it increasing power, and great as are the triumphs of the present century we may well believe that they are but a foretaste of what discovery and invention have yet in store for mankind. Encouraged by the thought that our labours cannot be thrown away, let us redouble our efforts in the noble struggle. In the Old World and in the New, recruits must be enlisted to fill the place of those whose work is done. Happy should I be if, through this visit of the Association or by any words of mine, a larger measure of the youthful activity of the West could be drawn into this service. The work may be hard and the discipline severe, but the interest never fails, and great is the privilege of achievement.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

THE STEVE ENGINE COMPANY OF AMERICA (Limited).—Capital 160,000*l.*, in shares of 50*l.* To carry on the business of mechanical and chemical engineers in connection with certain acquired patents. The subscribers are—R. Angus, 69, Holborn-road, 5; J. Murphy, Highgate, 1; E. Bull, Chiswick, 5; R. Radermacher, 16, Golborne-road, 10; E. L. Ernest, 8, East Acton Villas, 1; E. Moreton, Catford, 1; W. Lichfield, 23, Burnt Ash Hill, 5.

THE CARNARVON GREEN SLATE COMPANY (Limited).—Capital 25,000*l.*, in shares of 10*l.* To acquire, work, and develope certain quarries, according to the terms of an agreement made between F. Arnold, and J. White for the company. The subscribers (who take one share each) are—F. Arnold, Lewisham; H. Fermin, 31, Lombard-street; C. Hood, South Hill Park; F. Fermin, Southend; T. Debrez, Paris; J. White, Clapham; H. Kübler, 31, Lombard-street.

THE LIVER ALKALI COMPANY (Limited).—Capital 50,000*l.*, in shares of 10*l.* To take over the property and carry on the business of a company bearing the same name. The subscribers (who take one share) are—T. Robinson, Farnworth; J. Cook, St. Helen's; G. Peace, Eccles; H. Cooper, Liverpool; W. H. Richmond, Bootle; T. Cook, St. Helen's; M. L. Jervis, Rock Ferry.

THE LONDON LIFE-SAVING DRESS, BELT, AND COIL COMPANY (Limited).—Capital 25,000*l.*, in shares of 10*l.* To acquire and carry on the business belonging to F. W. Brewster, together with certain patents connected therewith. The subscribers (who take one share each) are—H. B. Adams, 12, Old-square; H. Pritchard, 15, Woburn-square; E. E. Foster, East Heath; R. G. Buist, 104, Alexandra-road; F. H. Hardcastle, 4, Paper Buildings; C. Harris, 6, Carlton-road; A. Pawson, 1, Hare-court.

THE SOUTH TYNESIDE AND DISTRICT TRAMWAYS COMPANY (Limited).—Capital 50,000*l.*, in shares of 10*l.* To carry on in connection with tramways or otherwise, omnibuses and other conveyances for passengers, parcels, and goods, &c. The subscribers (who take one share each) are C. Tennant, Inverleithen; A. Leslie, Gosforth; T. Nelson, Newcastle-on-Tyne; J. Tennant, Gateshead-on-Tyne; G. Spain, Newcastle-on-Tyne; G. H. Dexter, Gateshead-on-Tyne; W. S. Daglish, Tynemouth.

THE UNCLAIMED FUNDS DISCOVERY ASSOCIATION (Limited).—Capital 30,000*l.*, in shares of 1*l.* To assist persons in discovering their claims to unclaimed money in Chancery, dividends, finding lost wills, and missing relatives, &c. The subscribers (who take one share each) are—O. R. Mason, Chelsea; E. Scott, 32, Queen Victoria-street; H. Webb, Watford; H. Pearse, Holloway; J. Graham, Clapham; J. E. Knight, 12, Southampton-row; E. Crawley, Reading

THE ANCHOR FIRE OFFICE (Limited).—Capital 100,000*l.*, in shares of 1*l.* Every description of insurance business in all branches, with the exception of life. The subscribers (who take one share each) are—H. Fairbank, 327, Crystal Palace-road; A. Cuff, 26, Lilford-road; J. L. Sydney, 15, Randolph-crescent; J. Logie, 3 and 4, Queen-street; E. T. Pellowe, 144, Walworth-road; A. G. Sharpe, 68, Cheapside; J. J. Bennett, Barnsbury.

RIEHARD SHAW AND COMPANY (Limited).—Capital 25,000*l.*, in shares of 5*l.* To acquire and carry on a business of commission merchants, shippers, &c., at Albert Buildings, Preston-row, Liverpool. The subscribers (who take one share each) are—R. Shaw, Liverpool; J. Charnley, Liverpool; F. T. Wallis, Liverpool; F. C. Stackey, Liverpool; J. W. Root, Liverpool; D. Girvan, Liverpool; J. F. Peacock, Liverpool.

THE YSTALYFERA COMPANY (Limited).—Capital 100,000*l.*, in shares of 20*l.* To acquire the property, works, plant, machinery, and effects of the Ystalyfera Iron Company, and to continue the business attached thereto. The subscribers (who take one share each) are—T. Griffiths, Ystalyfera; S. Ranson, Ystalyfera; D. Thomas, Ystalyfera; W. Slater, Liverpool; H. R. J. Williams, Coity Maur; J. R. Cobb, Breton; R. Girvin, 2, Metal Exchange-buildings.

THE TRUST AND LOAN CORPORATION (Limited).—Capital 250,000*l.*, in shares of 2*l.* To carry on a banking and provincial business in all branches. The subscribers (who take one share each) are—L. B. Harvey, St. Margaret's; W. H. Atkinson, 61, Euston-road; C. Duff, 29, St. Mary's-road; F. E. Macdonald, 11, Goldsmith-street; T. W. Martin, 32, St. Swithin's-lane; W. B. Dow, 145, Southwark Bridge-road; J. Walton, 11, Jamaica-road.

CHARLES H. REED AND COMPANY (Limited).—Capital 25,000*l.*, in shares of 5*l.* To acquire certain works, plant, and materials situate at Sunderland, and to carry on the trades of ironmasters manufacturers of iron and steel, &c. The subscribers (who take one share each) are—C. H. Reed, Sunderland; J. Whitburn, Sunderland; J. Raine, Ryton-on-Tyne; R. E. Reed, Sunderland; R. Richards, Sunderland; H. Jackson, Sunderland; A. R. Reed, Sunderland.

WIRRAL RAILWAYS COMPANY (Limited).—Capital 600,000*l.*, in shares of 10*l.* The amalgamation and working of the Wirral Railway Company, and the Seacombe, Hoylake, and Deeside Railway Company. The subscribers (who take one share each) are—H. Robertson, Pole Camen; R. C. de G. Vyner, Kingston Hill; J. H. Darby, Wrexham; F. North, New Brighton; W. H. Gladstone, Hawarden Castle; J. Tomkinson, Tarporley; T. H. Jackson, Birkenhead.

THE STEAMSHIP BAY FISHER COMPANY (Limited).—Capital 10,000*l.*, in shares of 100*l.* To acquire, own, and work a steamship. The subscribers (who take one share each) are—John Fisher, Barrow-in-Furness; J. H. MacIlwaine, Strandtown; James Fisher, Barrow-in-Furness; J. Waddington, Barrow-in-Furness; R. Balfour, Barrow-in-Furness; J. Hunter, Barrow-in-Furness; H. Bannister, Barrow-in-Furness.

THE GRASKOP COMPANY, No. 2 (Limited).—Capital 20,000*l.*, in shares of 1*l.* To acquire and carry into effect a certain agreement made between the Balkis Company (Limited) of the one part, and K. F. Bellairs, on behalf of the company, of the other, for the acquisition of a certain property situated in the territory of the South African Republic, and to fully develope and improve this property by planting, clearing, building, and carrying on all operations connected with prospecting, mining, excavating, &c. The subscribers (who take one share each) are—J. V. Aspland, Tottenham, clerk; G. Tipper, Manor Park, solicitor; J. Basden, Peckham, traveller; E. Clements, 9, Laurence Pountney Hill, architect's assistant; J. P. Robertson, St. John's, drysalter; W. J. Paine, Shepherd's Bush, commercial traveller; F. H. Shore, Brixton, salt merchant. A majority of the subscribers will name and appoint the first directors, whose number must not be less than three or more than nine.

THE LITHGOW BOOT AND SHOE MANUFACTURING COMPANY (Limited).—Capital 25,000*l.*, in shares of 5*l.* To purchase and continue a boot and shoe manufacturing business situated at 40, High-street, Manchester. The subscribers are—W. Burn, Warrington, 10; G. Livesay, Manchester, 10; A. Wood, Harpurley, 10; J. Fuller, Manchester, 10; H. J. Smithard, Manchester, 10; G. Pollard, Manchester, 10; T. Lithgow, Manchester, 50.

Meetings of Public Companies.

PATENT SHAFT AND AXLETREE COMPANY.

The general meeting of shareholders was held at Birmingham, on Monday, Mr. T. E. WALKER in the chair.

The usual preliminaries having been disposed of, the report and accounts were submitted.

The CHAIRMAN, in moving their reception and adoption, explained the various items, and remarked that those who were present last year would remember that he ventured to make a promise that on this occasion they should have a dividend and no speech. Happily he now found himself in a position to redeem that promise. The dividend had been honestly earned, and the accounts required very little to be said. Turning to the figures, the only item which he considered in any way unsatisfactory was that relating to rates and taxes; but it was no use dwelling upon it, as they were perfectly helpless. Every other figure was satisfactory. Their stocks were considerably less than they were last year, bad debts were very much less, law charges were less, and the amount due to bankers was less. Competition in their business with America had been very keen, and the enormous tariffs were greatly in favour of native produce. Still they had sent out a good many sets of wheels, and they hoped to send out a good many more. All the large contracts to which reference was made last year had been satisfactorily completed, and there was quite as much work on their order-books at the present moment as they cared to take at the existing low prices. They would be fairly employed on what they had already got, certainly well into summer. Upon the amount of coal raised they had been charged a Mines Drainage rate of 3866*l.* 10s. 10d., and notwithstanding that frightful tax the collieries appeared to have just about held their own. Some of the Commissioners had publicly stated that there was a probability that there might be a reduction in the rates, and they were looking forward a little more hopefully than at this time last year. In common with most other traders in the Midland Counties, they had had to complain of the high rates charged by the railway companies. He merely mentioned the matter to express the hope that in their own interests railway companies would shortly see fit to revise the existing rates, and if so he was in hopes that the tendency which traffic of late had had of being driven towards the coast might be averted. Another matter which was specially mentioned in the last report was that of the manufacture of steel, which at that time they were going into. They could report favourably of what had taken place during the past 12 months. Although some difficulty had been found in obtaining as great a uniformity as they could wish in the manufacture of basic steel, yet on the other hand they were producing an excellent quality of open-hearth steel, the results in that direction being so satisfactory that they contemplated further extension and development. On the whole, he did not think it could be said that the iron trade of the Midland Counties was in a much more favourable position than it was 12 months ago, but he thought he was justified in saying that the emblem of their firm—the Star of Brunswick—was still in the ascendant, and the storms which had been threatening showed signs of breaking.

Mr. R. WILLIAMS seconded the motion. He remarked that the mere manufacture of iron was a very small proportion of the work done there. Their great industry was that of the manufacture of wheels and axles, of bridges and roofing, and those other things of which the Chairman had spoken. Their great variety of occupation gave them the opportunity of doing a large trade in good times, and in bad times more advantageously and with a greater likelihood of regularity than mere ironworks alone. He invited the attention of the shareholders to the very varied exhibit of the company's productions at the Wolverhampton Exhibition. They would see there not only specimens of iron in various forms, but the new material that was coming so largely into use—steel in every shape. One specimen in particular was worthy of notice—a large cast-steel anchor, weighing 5 tons. These appliances had hitherto been manufactured of forged iron; but if, as he believed, cast-steel could be proved in use to do its work as well, or better, as he believed, then there was an enormous future for this particular trade, as these things could be made of cast-steel certainly at two-thirds the price of forged iron. They had three steel-making processes in operation—the Bessemer, the open-hearth furnace, and the basic. Why should there be that cloud over the Patent Shaft Company? He believed the company had good things in store, and the works being in full operation, and their customers kept together, they would be in a most favourable position to take advantage of the improvement in trade which must certainly come.

The dividend of 5 per cent., free of income tax, was sanctioned. Messrs. T. E. Walker and J. N. Brown were re-elected directors, and Messrs. Howard Smith and Slocombe were reappointed auditors, the usual complimentary vote to the Chairman terminating the proceedings.

COLOMBIAN HYDRAULIC MINING COMPANY.

The ordinary general meeting of shareholders was held at the offices of the company, Blomfield-street, on Thursday,

Mr. J. T. P. PECHEY in the chair.

Mr. SYDNEY A. COBBETT (the secretary) read the notice convening the meeting. The report and accounts were taken as read.

The CHAIRMAN said, before moving the reception and adoption of the report and accounts, he wished to say how very glad they were to see their friend and colleague, Mr. Rogers, back amongst them. The shareholders would remember that last year Mr. Rogers visited the property, and wrote some very interesting letters from the mine, and as he had known that gentleman for many years as a close observer of men and things he had read those letters with great satisfaction. He was also very pleased that Mr. Oakes, the superintendent of the mines, was present, and that he had been restored to health and strength, and would return to Colombia on Sept. 17 to engineer the company into a thoroughly satisfactory condition. In the presence of Mr. Rogers and Mr. Oakes he felt that he must, as the Americans say, take a back seat. They knew the property perfectly, while his knowledge of it was gained from reading and conversation. During the past year, as the shareholders were aware, they had been engaged in carrying out the recommendation which they so heartily sanctioned at the last meeting, when instead of dividing the balance at the credit of the profit and loss account it was arranged that the surplus should be devoted to the bringing on of an additional supply of water, and to put the mine into a thoroughly sound and good condition; and, as the report informed them, this work had been done; but the time occupied in completing the ditches and carrying out the work had been somewhat longer, and had cost a rather larger amount than had been anticipated. The fact was that when Mr. Rogers, in consultation with Mr. Oakes, came to consider the matter it was thought better not to, as it were, make two bites of a cherry, and it was deemed advisable to do the work thoroughly and completely at once. In a short time now they would have 1000 miners' inches of water at work at the Malpaso Mine. The great advantage of this was that 500 inches could be employed at one point, and 500 inches at another, so that there should be no cessation whatever in making profitable returns. He need not tell the shareholders that water was the main essential for hydraulic work; and they were particularly fortunate in Colombia in being able to bring on a free supply of water. In California, as many of them were aware, water supplies had to be very heavily paid for, and water was now selling for 5d. or 6d. a miner's inch. The report showed that during the past year 1:98·825 ozs. of gold had been obtained, realising net 4380*l.* 13s. 5d. It was hardly necessary to remind them that the working this year had not been carried on with the view of making large returns, but to open up the mine in order to make the water supply result in profitable returns. He might mention that the accounts from the mine for the month of June had just been received, showing a gross return of $4041, and a net profit of $2488. This must be taken for what it was worth; but the superintendent told them that in July they would have a return of from $6500 to $7000, and a net profit of $700 or $800. The actual results for June and the anticipations for the following month showed that they were beginning the financial year with a profit; and no doubt when Mr. Oakes got back to the mine, and carried out the work originally intended, they would make much larger profits in the time to come than they had ever before made. He (the Chairman) was one of those who believed that this company stood second to none amongst the gold mining companies on the London market. He was quite aware that they had been a very long time getting it into shipshape, but they had always shown a profit when washing on the gravel bank, and he had no doubt, as Mr. Oakes would be able to tell them, that they would make very large returns indeed. The Chairman then moved the adoption of the reports and accounts.

Mr. C. O. ROGERS, in seconding the motion, said the shareholders were all aware that during the greater part of last year he was at the mine, and that when there he wrote several letters, most of which were communicated to the shareholders. When he arrived at the mine Mr. Oakes had just finished cleaning up on the upper mine, and it was a question then as to what was to be done, because owing to the position at which the sluice had been carried out, the mine was worked out of grade there. This was owing to no fault of Mr. Oakes, for he had been instructed to make returns, and to do so he had been obliged to work as he had. When the clean-up was made it became necessary to go right back and bring in the deep sluice to bottom the ground over which he had been running. Although he had worked out of grade it was proved by the shaft which had been sunk that he was leaving 30 or 40 ft. of good gravel under him. Before going out he (Mr Rogers) had been asked by his colleagues to turn his particular attention to the question of increasing the returns, either by extending the water supply, or by starting another mine, independent of the deeper sluice and the working gravel which they knew existed. Mr. Oakes and himself went to the Pavas Mine, and after prospecting a great deal they came to the conclusion that it hardly warranted money being spent upon it. Mr. Oakes then suggested this extra supply of water, putting forcibly before him that by opening the old ditch, upon which they had spent many thousands of pounds years ago, they could double the water supply, and that, in addition, by making a short ditch they could always secure a permanent supply of water for the machinery they were working. He came to the conclusion that the best thing to do was to recommend the directors to carry out Mr. Oakes' suggestion, and that instead of dividing the profits then made amongst the shareholders they should spend the amount on putting the company into a permanent state of working. The directors and the shareholders agreed to that, and Mr. Oakes at once set to work. In a very short time he had the old ditch cleaned, and the new ditch, from which they were now deriving benefit, started. They were now working with a permanent head of 500 inches, which they had never before had at Malpaso. In fact, it would have been impossible to work the hard gravel they were now dealing with but for this extra supply of water. With regard to the extent of the gravel he had no doubt that the gravel ahead of them would last for years and years. It had been imagined that the hard gravel which they were now working could not be made to pay, so that the two last returns, showing as they did a substantial profit, were highly satisfactory. So far the hard gravel had yielded as large a profit as the soft gravel—more than $3 an hour. Ahead of this ground they had not only richer gravel, but softer gravel, and one morning Mr. Oakes and himself had got over 150 colours to the pan, while they were making profits out of gravel without a single colour. They might take his word for it, that they would have returns which would take the shareholders breath away. As to the extent of the gravel deposits in the country generally, he had ridden for 40 or 50 miles straight away, and had seen the gravel extending the whole distance. It was different to the Californian deposits, which were contained in a defined channel; in Colombia the gravel ran off into different forks, making channels for itself. One of the great mistakes which had been made in talking about these deposits was in supposing that the Spaniards had only scratched the surface. The fact was, that they had done a large amount of work, and that none of these deposits would have been left if the Spaniards could have obtained sufficient water to work. It was really wonderful to see what the old workers had been able to do with the appliances which they had. They had left behind them miles and miles of tailings, although every stone taken out of the sluice must have been taken out by hand. No doubt the secret of their success was that the work was done by slaves. He had greater confidence in the company than ever. As the Chairman knew, he had a very large interest in the company and at one time it really seemed, when they were attacked by the wreckers, that they were going to lose all the money they had spent; but he had, at the time, made every arrangement to go over and take the thing under his charge. The wreckers would hardly have followed them there; or if they had they would by this time have been in the sluice or in the tailings.

The CHAIRMAN remarked that the thanks of the shareholders were especially due to Mr. Rogers for going out at his own expense to examine and report upon the property.

Mr. F. R. WILSON asked whether the 500 in. of water was now at work?

Mr. ROGERS said they were. They had the largest nozzle which they had ever used at work at Malpaso now. When the arrangements were completed they would have 1500 in., but unfortunately they could only use 1000 in. at a time, unless Mr. Oakes discovered that he could make another outlet. As he came over from Colombia there was so much gold brought on board from one State alone that there was scarcely room to sit down to dinner. They brought on more than 150,000*l.*, and during the year more than 1,000,000*l.* in gold had been shipped from Antioquia.

Mr. A. E. OAKES, the superintendent, generally confirmed the remarks made by Mr. Rogers, and explained the process of working. He stated that the season in which Mr. Rogers visited the mine was a very dry one, and they could only work with 200 to 250 in., and with such a small stream it was impossible to work at a profit. Such a stream would be perfectly useless against the hard gravel they were now dealing with. It would have been like trying to wash the gold out of the Bank of England with a fire-hose applied to the outside walls. However, they would now have an ample supply of water, either to divide into two parts, or to concentrate on one spot while they were carrying up the deep sluice. In California they would blast such gravel as was now being dealt with at Malpaso before attempting to wash it; but in Colombia powder was so expensive that it would not pay to put large charges of powder in, and they were, therefore, obliged to wash the gold away. He thought they had now passed through the poorest of the hard gravel. It might continue hard right up the mine on the bedrock, but it showed every probability of giving good profits. He believed the returns would go on improving from this time, although at present they were doing more or less preliminary work.

Mr. OAKES, in reply to Mr. STEEL, said they were now in the centre of the channel, and were working each way as they found the gravel pay. With regard to the other mines Rica was a very good mine, and he thought that it would pay well if sufficient capital could be spent to bring the Guali River on. However, that would involve great expense, as the Guali was a big river, and they would have to go 9 miles for it.

Mr. OAKES, in reply to Mr. THOMPSON, said the face he carried up the mine was about 300 ft. wide. There were six parallel channels at Malpaso, only one of which was now being worked.

The CHAIRMAN said it was highly probable that there were other mines on the property which they would hereafter be able to work at a profit; but at any rate for many years to come they had ground which would yield them large profits.

The report and accounts were then unanimously adopted.

The CHAIRMAN moved the re-election of the retiring directors, Mr. C. Hopkinson and Mr. C. O. Rogers.—Mr. ALFRED COBBETT seconded the motion, which was adopted.

On the motion of Mr. DUNLOP, seconded by Mr. GRANGE, the auditor, Mr. L. H. Evans was re-appointed.

The CHAIRMAN, in proposing a cordial vote of thanks to Mr. Oakes, said that that gentleman had a very large interest in the company, which he had recently increased.

The proposition was adopted, and votes of thanks were also passed to Mr. Rogers and to the Chairman, directors, and officers.

The meeting then closed.

TRANSVAAL GOLD EXPLORATION AND LAND COMPANY.

The first annual meeting of shareholders was held at the City Terminus Hotel, Cannon-street, yesterday,

Mr. E. ESCOMBE in the chair.

Mr. C. H. BURNAND (the secretary) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen, in welcoming you here to-day I am sorry to have to inform you that Mr. Herbert Magniac, who was to have occupied the chair, had been taken ill at Spa, and is thus prevented from being present to-day, and I have been called upon unexpectedly to take his place. Mr. Magniac's absence is to be regretted for many reasons. In the first place, he has devoted an immense amount of time, patience, and hard work to the affairs of this company; in addition to that he holds a large shareholding interest in the company; but a more important reason is that he would have addressed you to-day with a mastery of facts and with an ability to which I can lay no claim. We have trespassed on your good nature in calling you together to-day, many of you at great personal inconvenience; but the meeting had already been postponed longer than we could have wished, and for that reason we have called the meeting for the earliest date possible. We are perfectly sensible that there has been a feeling of great disappointment at the delays which have taken place in the development of this company's property; but before addressing myself to that I would like to make a few remarks on the property itself. The information we continue to receive all tends to confirm the fact that we possess a property of great value, and one which gives promise of large returns. In the first place Mr. Crutwell's report. He is a geologist, as you are aware, of large experience. His report by many might have been considered speculative; but next we had the report of Mr. O'Donoghue, who proceeded to South Africa to lay his plans for the best way of working the property. Mr. O'Donoghue's report is by no means speculative or theoretical. It deals with facts alone, gathered after patient investigation and after research which lasted for six months, not from a cursory or perfunctory examination of the property. I also have been over the property, and although I am not an expert, I can affirm it requires no skill or scientific knowledge to convince anybody that we possess a property of great richness. The Chairman at our last meeting told you of the origin of our company, which, as you are probably aware was a private syndicate, consisting of about 60 members, and at that time arrangements were made to carry out the objects we had in view—exploring and investigating the property. Before many months had passed our property began to be talked about a good deal, and some of our shareholders parted with a portion of their holding. The shares gradually became split up, and now we are a great mining company, consisting of no less than 562 shareholders. The arrangements made at the outset of our career were such as were thought to be the best for the objects we had in view; but experience has proved that they were not suitable. The first thing we did was to appoint Mr. Allen, a gentleman of well-known integrity and of considerable ability, and well adapted for the business with which we entrusted him. His first duty was to acquire the transfer of the property, to settle with the diggers, and to do a great deal of work which required colonial experience. That work has been done to our fullest satisfaction; but when we heard from Mr. O'Donoghue we found that the whole of the plans of working would have to be altered. It then became necessary that we should secure the services of a capable mining superintendent, and in order that we might have professional advice in that respect, we invited Mr. J. C. F. Lee to join the board, and since he did so we have derived the greatest possible benefit from his knowledge of mining matters in general. In addition to the initial difficulties which attend all mining undertakings, in South Africa particularly, we have had quite an unusual amount of obstacles to contend with. It is an extremely difficult country to work in; indeed I should say, speaking with some experience, that it is a heart-breaking country where anything like enterprise or progress is required. In addition to these initial difficulties Mr. O'Donoghue, when he arrived upon the ground, found it necessary to make very extensive alterations in the machinery sites. We had to make extensive earthworks, and we had also to undertake blasting operations, which we could not have foreseen, in addition to which, we have had a considerable amount of difficulty with our workmen. We sent out the best men we could get here; but when they got there they gave us more trouble than we anticipated. It is impossible to explain what obstacles such men can present by employing only passive resistance, and without breaking their contracts. However, we have now fairly overcome all the initial difficulties, and the disappointments that we have experienced have been surmounted, and the time has arrived when we may hopefully look forward to the improved position of developing the property. You are aware, by the report, that the services of Mr. F. Gardner Williams have been engaged to conduct the business of this company in the Transvaal. He was recommended to us by Mr. De Crane and Mr. Hamilton Smith, two of the greatest authorities on mining, and we think that the property under his direction has a bright future in store for us. You would probably wish to know what our instructions to Mr. Williams were. We said—"We want no more reports and no more delays; we want you to get the gold out of the ground; we know that the gold is there, and that you have the ability to bring it out, and while you are preparing plans for the greater work of hydraulicing, you will direct your attention to working such spots of the property as will give most speedy returns, and by every means in your power endeavour to pay your way out of the mining returns." We heard last week that the machinery had commenced working at Ophir Hill, and that it worked well. At our last meeting some of our shareholders wished to know if we were taking any steps towards applying to the Stock Exchange for a quotation. In deference to the request, we put ourselves in communication with our stockbrokers, and the whole of the company's business was placed before them; but they told us that, in their opinion, it was not a suitable time to apply for a quotation, having regard to the fact that the capital was all privately subscribed, and that the company had not yet assumed sufficient importance in their opinion to make the application desirable. It is no use going to a doctor if you do not take his advice, and, therefore, we acted on the recommendation of our brokers and withheld our application; but we hope to bring it forward at some future time with success. There is one other matter that I wish to refer to before concluding, and that is in respect to telegrams. Mr. Farmer was especially anxious at our last meeting that we should publish our cablegrams week by week, and we did so up to a certain period; but a month or two after the meeting the cablegrams were of a somewhat unsatisfactory character, not as to the property itself, for we are fully assured of its value, but in this respect. For instance, in one week we got a cablegram that 37 tons had been crushed, but we had no explanation as to why only 37 tons had been crushed, and having regard to the fact that cablegrams cost 10s. a word, it is expensive to have to telegraph back for explanations. We think it desirable, therefore, only to give such information to shareholders as it is desirable in their interests to give. I have now endeavoured as briefly as possibly could to put before you the causes of the disappointments which we have experienced, and which the committee of management most fully share, and I think there is nothing else I need refer to; but if there is any point which I have not dwelt upon I shall be very happy to answer any question which gentlemen may put to me. I beg formally to move the adoption of the report and accounts.—Mr. NICOL BROWN seconded the motion.

Mr. VAN RAALTE said he came to the meeting prepared to be disappointed, but he knew from experience what a difficult country South Africa was to such operations as the company was engaged in, and he was, therefore, not at all surprised at the difficulties which had taken place, and that they had had better results than had been obtained. He believed, however, judging from information which he had obtained from mining engineers quite unconnected with the company, that they possessed a very valuable property, and that with a little patience things would work round all right. It might take a few months longer to accomplish than had been anticipated, but he had no doubt that the result they would have every reason to be satisfied with the investment they had made in this company.

Mr. HENDERSON said with regard to the cablegrams, that he thought it would be right that the shareholders should be informed of the actual crushings of gold derived from the crushings.

The CHAIRMAN quite agreed with this remark, and said that the company intended to give the shareholders all the information they could; but they did not wish to publish telegrams which might be misleading. Any shareholder could see the cablegrams at the company's office.

A SHAREHOLDER said the Articles provided that the accounts should be presented within three months of the date to which they were made up; but in this case the accounts were made up to Dec. 31.

The CHAIRMAN replied that no returns had been received from the mine which would enable them to frame accounts to a later date; but the report informed the shareholders what balance the company had available for working the property, and that was all the information they could give. Mr. Williams was at Cape Town on the 14th inst., and was probably at the Pilgrim's Rest by this time.

In reply to Mr. DEACON, the CHAIRMAN said it was not considered important that they could obtain a Stock Exchange quotation; but their brokers advised that it would be inadvisable to apply for one at the present time.

Mr. S. G. SHEPPARD remarked that as the capital had been privately subscribed he was bound to say, as a broker of thirty years' experience, that he did not believe the company would ever get a quotation; but so far from this being a disadvantage, he believed it would be an advantage to the shareholders.

The CHAIRMAN, in reply to a SHAREHOLDER, said that all the stamps were at work except one of the pneumatic stamps, which had lost its head. By the latest advices they were crushing 50 tons a week with one head of stamps.

The report and accounts were then unanimously adopted.

Mr. C. LEE NICHOLS was reappointed auditor.

The CHAIRMAN said the services of the committee of management had up to the present been perfectly gratuitous.

On the motion of Mr. WOOD, seconded by Mr. VAN RAALTE, the committee of management were re-elected. It consists of Messrs. Horace Farquhar, Herbert Magniac, J. C. F. Lee, E. Escombe, and Nicol Brown.

The meeting closed with a vote of thanks to the Chairman and directors.

MICHIPICOTEN COPPER COMPANY.

A special general meeting of shareholders was held at the office of the company, Dashwood House, on Thursday,

Mr. GEORGE BATTERS in the chair.

Mr. W. J. LAVINGTON (the secretary) read the notice calling the meeting, which stated that as sufficient capital had not been forthcoming for the purpose of carrying on operations, the present meeting be called for the purpose of winding up the company.

The CHAIRMAN said:—Gentlemen, since we last met you no special feature has arisen, and the circumstances of the case are thoroughly and perfectly known to you all. We apparently have no alternative but to pass the resolution to wind up the present company; but I may say that the opinion of the large bondholders is decidedly favourable to the interests of the shareholders. They are acting in self-defence in taking possession of the property; but they are protecting the interests of the shareholders at the same time quite as much as their own. There have been several suggestions made as to the resuscitation of the company in order to protect the shareholders' interests. One is that the bondholders would be disposed to let the property to them at a royalty. At any rate, there is time to consider all these questions. One thing may be relied upon, and that is, that although the shareholders have manifested such an utter negation of interest in their own affairs, yet so far as it is possible to protect their interests under the circumstances those interests will be protected. The directors have the same faith in the property they ever had, and the same faith is manifested in Canada, and there is no reason to believe otherwise than that Michipicoten Island is a valuable island for copper, and that the company possesses, under very favourable circumstances, a royalty of very great value. It is to be hoped that, although we are in such a dreadful period of depression at the present time, that we may emerge misery will pass away, and that we shall see better times in the autumn of the year. I would ask Mr. Lavington what promises of support have come in since last meeting?—The SECRETARY said that since the last meeting only about 100 shares had been applied for.

The CHAIRMAN: Therefore, gentlemen, you will see it was impossible to attempt to carry out the work with the support which was given us. Therefore, I have now to propose that the Michipicoten Copper Company be wound up voluntarily. I may mention that it will afterwards be necessary to appoint liquidators.

Mr. RICHARDSON said he thought one of the bondholders should be associated with the secretary to act as liquidators.

Mr. W. CATLEY STEWART: I will put myself in order by saying that it is my desire to propose myself as a liquidator. I have taken great interest in the company, and am intimately acquainted with its proceedings, and I am not only an original shareholder but also a debenture holder.

The CHAIRMAN: It is one of those wretched things. Mr. Stewart, in which the liquidators will not receive anything, and, therefore, I think that Mr. Curtis, jun., and Mr. Lavington would be the proper persons to wind up the company.

Mr. MACFIE seconded the motion for winding up the company, which was put to the meeting and carried unanimously.

Some discussion ensued as to the appointment of liquidators, and the following gentlemen were unanimously appointed—Mr. Richardson and Mr. W. J. Lavington; and the CHAIRMAN said that no doubt those gentlemen would, if they deemed it advisable, take counsel with Mr. Stewart on any point which might arise.—The meeting then broke up.

QUEBRADA RAILWAY, LAND, AND COPPER COMPANY.

The second ordinary general meeting of shareholders was held at the Cannon-street Hotel, yesterday,

The Hon. T. C. BRUCE, M.P., in the chair.

Mr. N. G. BURCH (managing director and secretary) read the notice calling the meeting. The report and accounts, of which the subjoined is an abstract, were taken as read.

The local expenditure in the railway department for 1883 amounted to 48,525*l.* 4s. 8d., as compared with 46,936*l.* 5s. 10d. expended in the previous year by the Bolivar Railway Company, being an increase of 3·38 per cent.; but it must not be forgotten that the tonnage carried was considerably in excess of 1882, the mineral carried to the coast showing an increase in quantity of 11·45 per cent., and that to the smelting works an increase of 21·5 per cent. over the previous year. It is, therefore, apparent that the cost per ton was less in 1883 than in 1882; but the board does not think the past year has shown the full benefit that may be expected in the railway expenditure as a result of the consolidation of all interests. The local railway receipts were 19,712*l.* 19s. 7d. in 1883, as compared with 17,505*l.* 13s. 4d. in 1882, showing an increase of 2207*l.* 6s. 3d.

The board can report no further progress in the negociations for acquiring the right to extend the company's railway towards the interior, nor does the board see its way to advance this matter under present financial conditions; but should the shareholders decide at a later period that the interests of the company would be promoted by such an extension, the board believes that the Venezuelan Government would grant to the company every reasonable facility for securing the accomplishment of a work so important to the country.

The mines expenditure includes somewhat heavy dead charges, which have been incurred in driving new adits at both Aroa and Titiara Mines, the economical results of which, if only partially apparent in 1884, should become more so in later accounts. The Aroa adit (Holman's level) has been driven south to meet the stopes under the old deep level, with which it is now on the point of being communicated, so that in future the ore from this part of the mine should be removed more economically than in 1883. This will have the further great advantage of affording a base from which to explore the ground north and east of present workings at Aroa, and will provide improved conditions of ventilation.

The new adit at Titiara (Bruce's level), has been driven over 100 fms. from the hill side, but has not as yet intersected the lode. It was originally hoped that it might have done so by this time, and the latest advices report a slight change for the better in the ground driven through. The siding from the main line of railway will be brought into direct communication with this adit, which in any case will be communicated with the upper workings, and should eventually lead to a considerable development of the mineral output from the Titiara Mine, either for export or reduction purposes.

In the smelting department and reduction works, the greater profit expected from the increased production of regulus, 36½ per cent. over 1882, has been rendered almost nugatory by the fall (which could not have been anticipated) in the value of the copper contents; but apart from this, the board cannot but believe that this department is capable of being worked on a more effective and economical system than has hitherto prevailed. The ores are doubtless of a refractory nature, but the consumption of coke is excessive, and the board hope to introduce reductions in this and other elements of expenditure in the department.

The gentleman sent out by the board (as mentioned in the interim report) to test the poorer ores on a working scale, with a view to determining their suitability for being treated by one or other of the wet methods in use at Rio Tinto and elsewhere, is still actively prosecuting his investigations and experiments on the spot, and although he has met with some disappointment in regard to the sulphide ores, there is good reason to believe that a considerable proportion of the Titiara minerals, as well as some of the Aroa reserves, are adapted to such a treatment.

Although the quantity of mineral (ore and regulus) sent to the coast for shipment was nearly 12 per cent. greater than in the previous year, the gross proceeds were nearly 11 per cent. less, the receipts for 1883 (from this source)

ring been 197,188*l.* 7s. 6d., as against 221,448*l.* 8s. 11d. in 1882. Both re-ins and ore, moreover, show a slight falling off in quality, but the deteriora-n has been only of a temporary character, the export ore having been re-ed to the former quality. The number of units of copper sold in the produce 1883 was 358,869=35883/4 tons of metallic copper, which shows an increase of 200 units over the previous year, equal to 174 tons of metallic copper. But, fortunately, the price realised was about 2s. per unit, or, say, 10*l.* per ton of tallic copper, less.

The average price realised for 1883 was slightly under 11s. per unit, against average of about 13s. per unit for the previous year.

It is gratifying to observe that in the face of this exceptional depression the ount of revenue account shows a balance that more than covers the deben-re interest, although the final balance of the year's working shows a loss of 83*l.* 9s. 6d. This is after payment of debenture and other interest, the last entioned item being heavier than is expected in future, owing to the accumu tion of stocks at a time when the board was unwilling to realise at the depre-ted prices that were offered, and which they were finally but reluctantly pelled to accept.

On Nov. 15, 1883, the Venezuelan Government published a decree providing ongst other things that the titles of all mining properties should be presented the National Government for revalidation, and subjecting such properties to rtain pecuniary contributions, and to a code of Governmental laws and regula-ns. The necessary certificate of revalidation was duly granted by the Govern-nt of General Guzman Blanco (to whom once more the grateful acknow-gements of the company are due), and doubts with which the board had been uieted were satisfactorily set at rest. The decree in question was doubtless signed primarily to regulate and govern the conditions under which gold ning properties should be conducted in Venezuelan Guayana, where this in-stry had shown a remarkable and rapid development, and this view is con-med by the fact that the Government published a supplemental decree on ril 26, specifically exempting copper mines from the payment of the contri-tions payable under before-mentioned decree of Nov. 15, 1883.

Although the Governmental decree above-mentioned was the immediate occa-n of Mr. Burch's journey, it had for some time been felt by the board that h a visit was very much desired for other reasons, and especially for the ter organisation of the staff consequent upon the amalgamation of the two companies. In this respect also the board's anticipations have been realised, d there is every reason to hope that the benefits of the visits will be numerous d lasting.

The CHAIRMAN said it was with feelings of great regret and disappointment that the directors came before the shareholders to-day to present so unsatisfactory a conclusion of the workings of the last year. The reason of this unfortunate state of things was perfectly obvious to everybody who was in the least degree acquainted with business. It was accounted for entirely by the rapid depreciation in the price of copper, which commenced last year, and which was going on still. To give them an idea how that depreciation had acted upon their returns he might state that the price per unit, on the average of the sales of the year 1883, was 2s. per unit less than it was in the average of the year before, which represented a falling off of about 10*l.* per ton on the ore exported. The amount of ore ex-orted during the year was larger than it was the year before. The number of nits of copper sold was, in round numbers, 358,000, which was an increase of 2,000 on the year before, and the difference caused by the fall of copper on that mount was about 35,000*l.* The causes of that depression of price were various, nd were well known to gentlemen engaged in the trade. It was partly ac-counted for by the general depression in trade, which affected every industry, nd particularly the industry connected with metals, and partly by the increase in the quantity of copper imported into this country, particularly from Ame-ica, which had had the effect of depreciating the price. It was impossible for anyone to make any anticipation regarding the future course of trade. At pre-sent there was certainly no revival, but there were symptoms which, in the view of certain gentlemen, led them to suppose that there might be some dimi-nution in the amount of copper sent to this country, and some revival in the trade. Under these circumstances, what was the course open to bring this company to its proper state of prosperity? The directors believed that the way to meet this depression mainly rested on the increase of production. Another company, the Rio Tinto, had increased its supply in some proportion to the decrease in the value of copper. That was the object which the directors of this company had in view. To some extent, last year they did increase the production, but not sufficiently to meet the depreciation in price; and the directors intended to pursue the same course, and to provide, as far as they could, against the difficulties which they might have to meet. As regarded the actual value of the property, as a mineral property, there could be no doubt whatever, because all the exploratory works tended to prove the great extent and great value of the deposits. The difficulty with which the directors had to deal was not as regarded want of quantity of mineral, but how to dispose of it to the best advantage. The peculiarity of the Quebrada mineral was, that although it was, in many parts, richer in copper, it was a somewhat refractory ore to treat, and was rather more difficult to smelt than some other ores. The effect of this was, that in times like the present, when the copper trade was much depressed, it acted very much against the company, because when trade was brisk the smelters took all the copper they could get, but when trade was dull and the supply was large, they took the mineral which gave the less trouble in treatment. In view of this the directors had lately been considering certain proposals of disposing of the mineral and having it smelted upon a fixed toll. If those proposals were worked out there was reason to suppose it would remove one of the company's great difficulties, because they would not have to wait to dispose of the ore and run up interest against it. There was another question which had been occupying the attention of the board, which was one of the very utmost importance for the future of the company. Those who had been connected with this company for any length of time must know that when the Quebrada Mine was first started, there was ore of very great value, which was brought down, at very great expense, it was true, but in those times it gave a very good return. But the quantity was not very great, at least, the export was not very great. Of late years, the directors had endeavoured to meet the difference of price by in-creasing the quantity of ore exported, and there was in the mine still a large quantity of very good ore, not, perhaps, of the extreme value of the ore which was brought forward at first, but still good marketable ore. When they came to export largely they had to break a very large quantity of ore of inferior character, because the good ore was mixed with ore of an inferior character, although it was good fair ore compared with the ores of other companies. It had greatly engaged the attention of the directors to find in what way they could turn these inferior ores to account. Some years ago, they erected smelt-ing works, which had gone on and produced certain results which, although not entirely unfavourable, had not been so good as they thought should be got out of the production; therefore, in order to deal with this question, the directors, in the beginning of the year, sent out a gentleman of great mining experience, who had been in the employment of the Rio Tinto Company, with the view of experimenting on the different methods of treatment with respect to these ores. The directors had first in view to treat these ores by what was called the wet process; but it appeared that a considerable proportion of what were called the sulphides were not amenable to the wet process, and accordingly experiments had been con-tinued to improve the present system of calcination in order to give better re-sults. Those experiments had taken time, but the results so far obtained went to show that there were improved methods of calcinations which would enable better results to be obtained out of this class of ore. In addition to what was called the sulphide ore, there was a considerable quantity of carbonates and oxides, particularly in what was called the Titiara Mine, and the directors believed they could be treated by the wet process, and, therefore, cementation works would be established, and by these means the directors hoped to be able to give good results out of these inferior ores. Owing to the large increase in the quantity of ore sent down the directors had found it necessary to increase the amount of plant on the rail-way. With reference to the working of the mine itself, the working had con-tinued very much on the same lines as before. They had made some progress in the exploratory works, and they were still finding the further they went greater evidence of the extent and wealth of these lodes. The working during a part of last year had been retarded by the epidemic of fever, which had caused the death of some of the men, and disabled many others. Although the climate was a trying one to European constitutions, still it was not in itself un-healthy, except when these epidemics of fever arose. The directors had given instructions to improve the sanitary condition of the houses. There were two points with regard to the mine which he wished to refer to. Two or three years ago he informed them that they had undertaken a new level, and that at the lowest point which they could get at, which was called Holman's level, they had intercepted the Arca lode. The lodes were somewhat irregular in their direction, and whilst running the level the lode was not discovered at the point expected. They accordingly turned the level more to the eastward, with the view of catching the lode, and the lode had since been found in the low level, and was a large mass of ore of a very fine quality. This proved two things. In the first place that the lode did not stop, but went on; and also that in both quantity and quality it was superior to what they had above. That gave them 60 ft. below the present face, which would very much improve the working and ventilation of that part of the mine. There was another level in the Titiara Mine, where they adopted a similar plan. A level was driven into the face of the hill, 180 ft. below the present workings. That level had not, as yet, inter-cepted the lode, but there was every reason to believe, from the indications, that in a short time they would come to a lode there. At any rate, the immediate result had been to drain all the workings above, showing there was open commu-nication between the ground. He then referred to one or two points in the mine, and said there was no doubt whatever as to the very large amount of mineral, but the difficulty was to get the mineral to market at a remunerative rate; and this was what the directors were trying to do. In effecting the amalgamation certain legal formalities had to be observed and other matters to be seen to, and the directors sent Mr. Burch over to Venezuela; and he need not say that Mr. Burch did his work extremely well, and all difficulties were removed. All diffi-culty regarding the question of titles had been removed, which was partly owing to the hearty co-operation of the Minister of Venezuela in this country, who had taken an enlightened view of the interests of his country, and had done all he could to encourage enterprise with it. It might have occurred to some gentlemen to consider what would be the position of these two companies had the amalgamation of last year not taken place. The position would have been this: the total amount of free revenue of the two companies together had been just sufficient to enable the directors to pay the debenture interest. If the companies had been separated something must have been done, for unless the debenture interest were paid the works would be stopped, and the whole thing would have gone to destruction. He went into some of the details of the old working arrangements between the two companies, and he pointed out that under the new arrangement there was obtained a freedom of working which tended greatly to the benefit of both companies. He added that it was impossible to forecast the future, but he hoped that the efforts which the directors were making would enable them to utilise a great part of the property which was at present comparatively useless, and place the company in a much better position than it filled at present. In conclusion, the Chairman moved the adoption of the report and accounts.—Mr. T. W. MEATES seconded the motion.

A short discussion ensued, in which Mr. Hancock, Mr. Saqui, Mr. Russell, and other gentlemen took part, and the CHAIRMAN replied to some questions on points of detail, after which the resolution for the adoption of the report and accounts was put to the meeting and carried unanimously.

Mr. N. G. BURCH, at the request of the meeting, gave a very interesting account of his visit to the property. He said he left England on March 17, and arrived at Tucacas on April 5. The town itself was a thriving place, and would in time be a very valuable property belonging to the company, as it was on the company's ground. He referred to the great benefits which had been conferred, not only on the company, but on the country itself, by the improved railway communication which had been established. Incidentally he mentioned that, in addition to the copper there were large deposits of coal on the property, and they were also within 300 miles or 400 miles of the richest gold field in the world. He did not mean to say that they had gold on this property, but if they had they had ample means for developing it. The railway was originally designed for a comparatively limited transport—that was to say the contract quantity was 20,000 tons a year. Now they were exporting double the quantity originally provided by the contract, which necessarily required a more substantial and solid line, and therefore the board had judiciously applied a considerable sum of money to the improvement of the line. Having pointed out that the passenger and other traffic over the line would, probably, largely increase with the increase of population, he went on to refer to the mines themselves, and said there could be no question whatever that the shareholders possessed a very splendid property. He went through the whole of the mines which were opened, and through the whole of the mineralised zone. They had opened upon it in six distinct places; in four of those the operations were what would, in this country and Europe, be considered very large and extensive, and in two of them, Aros and Titiara, they were extremely large. In this country people looked upon 3 or 4 ft. as a good width for a lode; but the hotel in which they were assembled was only half the width of the lode in some places on this company's property. The connection between the Titiara mine and the railway was important, because it was now a valuable adjunct in view of the depression in the market value of copper, inasmuch as more copper must be exported in order to counteract the depressed price. Another probable source of revenue was in the vast amount of wood and fibrous products in the forest on the company's property, which was 60 miles long, with a river frontage of 10 miles. Some of these products had, from time to time, been brought to this country, and had been sold at a profit, but one difficulty which the board had had to labour under was that they could not always command all the labour they required. The Government of Venezuela had passed a decree authorising the importation of coolie labourers, which, if carried out, would be of advantage to the company. In conclusion, Mr. Burch said that he left the property very deeply impressed with its great value and belief in its future.

The retiring directors, the Hon. T. C. Bruce, M.P., and Mr. James Anderson, were re-elected, and the auditors, Messrs. Quilter, Ball, and Co., were reappointed.

Very cordial votes of thanks were then passed to the Chairman, directors, and Mr. Burch, and the meeting broke up.

LINLITHGOW OIL COMPANY.—At the meeting at Edinburgh on Monday the Chairman (Mr. T. Spowart) stated that the progress of the company had been satisfactory. The capital originally proposed was 200,000*l.*, in 20,000 shares of 10*l.* each, but the amount subscribed was 140,000*l.*, which the directors considered ample for the requirements of the company. Should more capital be needed for the extension of works or other purposes, they hoped they might issue the remaining shares at some considerable advantage to the company. They had appointed as managers gentlemen who had had considerable experience in similar posts, and were possessed of great ability. The selection of retorts had given the directors great concern. They had finally adopted the Henderson, and had no doubt it would show good results. There had been four benches of 52 retorts each ordered, and two of these had been erected, while they expected that the whole of them would be completed in the course of three or four months. The railway was progressing very favourably, and would be ready in about six or eight months. The report of Messrs. Langdale, Frew, and Langdale, engineers, he said was very satisfactory. The mine was now about 36 fms. deep—into the Broxburn seam—and the shale was of the full thickness, 6 ft. 4 in. When the fittings were complete, the engineers said that the mine would make a very efficient winning. In reply to questions the Chairman said that the royalty on the minerals taken from the Champfleurie estate was 10d. per ton, and on those taken from Ochiltree estate it was 9d. per ton. The cost of their new railway, which was to be completed in six months, was to be 13,000*l.* They had appointed Mr. Sutherland, late chief engineer at Oakbank, as manager at the works, Mr. James Hamilton as manager of the chemical department, and Mr. Beveridge as mining manager.

PROPOSED WINDING-UP OF THE BEREHAVEN MINING COMPANY.—At the annual meeting in February Messrs. Harris, Brunker, and Hughes were appointed a committee, with power to add to their number, to confer with the directors as to the feasibility of raising additional capital, or of making sale of the mines, and that they have power to enter into a provisional agreement for either purpose, and that a special meeting be called at the earliest period to report. This committee have just reported:—"We beg to report that we have failed to obtain a purchaser for the mines and plant, and see no probability whatever of obtaining fresh capital. We, therefore, recommend that steps be taken to wind-up the company voluntarily with the least possible expense, and that all further expenditure that can be avoided shall at once cease." The directors, with regret, feel obliged to recommend the adoption of this report by the shareholders, and have accordingly called a general meeting for Sept. 4 for its consideration." Mining Company of Ireland shares have suddenly advanced from 1 to 1⅛.

MOUNTAIN OF GOLD IN QUEENSLAND.

In forwarding an abstract of an interesting paper, "Notes on Gold," read before the Royal Society of New South Wales at a recent meeting by Dr. LEIBIUS, M.A., F.C.S., our Brisbane correspondent (July 12) writes:—The freehold mountain of gold referred to in the subjoined abstract—the Mount Morgan Mine, near Rockhampton, is one of the wonders of the world, both in a scientific and a financial point of view. Please publish it for the benefit of English readers. There is none of it for sale at any price now: 31,000*l.* was given for a one-tenth share some time ago. It is situate in Queensland.

Towards the end of 1882, says Dr. Leibius, three brothers, named Morgan, discovered about 25 miles from Rockhampton, near the Dee river, auriferous deposits, which not only on account of their richness, but especially from a scientific point of view, bid fair to be classed among the most remarkable examples of auriferous deposits yet known. The lucky prospectors have for some time kept their discovery rather quiet; last year they had been for several months retarded in their work of developing their mine by want of water, and it is only comparatively lately that its extent and richness have been ascertained. The Capricornian, a Rockhampton newspaper, in its issue of March 22 last, gives an interesting account of this mine, under the heading "The Dee Gold Mine," from which and also from information and specimen kindly supplied to me by Mr. Walter Hall, of Sydney, one of the present owners of the mine, I have obtained much valuable information regarding the same. The Mount Morgan Mine, so called after the name of its discoverers, is a mountain ridge, rising about 400 ft., and consists of ferruginous quartz in which the gold is disseminated in a very finely-divided state.

This mountain ridge appears to be the result of a thermo-spring which in past ages held quartz, iron, and gold in solution, and from which the gold has been precipitated in a finely-divided state more or less coated with hydrated oxide of iron. As the mine is being developed caves are opened out, from the roof of which this oxide of iron and silica hangs like stalactites the size of a finger, and in which the gold is readily seen finely disseminated, as shown by samples brought here to-night. As the Capricornian, before referred to, says:—"The formation operated on cannot be called a reef. The whole hill top seems to be of richly auriferous stone. It is merely cut away to suit the convenience of the miners, so that a quarry or broad terrace has been formed. The cutting is 20 ft. high, and about 100 ft. long, and the stone is of the same character the whole distance, and extends to the summit of the mountain, several chains higher. The facility with which the gold-bearing quartz may be obtained may be judged from the fact that a charge of blasting powder only needs to be put in anywhere along the workings, and tons of it can be displaced. The expense of securing it it is therefore comparatively small. It is carted about a quarter of a mile along a good metalled road down the mountain side, and is then thrown into a wooden shoot, wide and deep, and at most 200 ft. long. At the bottom a cutting has been made for the reception of the stone, and barriers raised to prevent its progress down the hill. It is then carted about half-a-mile to No. 1 battery. There are two batteries, one of 10 the other of 15 stampers, where about 230 tons are passed through per week." The before-mentioned paper says:—"The owners here possess an apparently inexhaustible deposit of auriferous quartz, and are able to mine it for almost quarter of the usual cost. They are very reticent as to the amount of stone they are putting through, and the yield obtained; but we understand about 100 tons are being crushed at No. 1 battery, and 130 at No. 2 weekly. The return is said to be not less than 5 ozs. to the ton."

While, however, especially from a geological point of view, the occurrence of this gold is highly interesting, the character of the gold is not less so. Lock, in his work on gold, published in 1882, says:—"No gold has yet been found in nature unalloyed with silver," yet this gold from the Mount Morgan Mine, of which since February last already over 10,000 ozs. have been received as retorted gold at the Sydney Mint, is found to be free from silver—a minute trace excepted. I have brought some of this retorted gold rolled out very thin to show its toughness. It assays 99 and 7-10ths per cent. of gold; the rest is copper, with a trace of iron. Gold assaying 99 and 7-10ths per cent. is worth 4*l.* 4s. 8d. per ounce. Gold from the same mine received at the Mint assayed as high as 99 and 8-10ths per cent. It is, as far as I know, the richest native gold hitherto found. The richest gold next to this comes, I believe, from Maryborough, Victoria, which assays 99 and 3-10ths per cent.; while that from its namesake in Queensland contains only 85 per cent. gold. F. B. Miller, in his paper "On Gold Refining by Chlorine Gas," read before this society in 1869, alludes to the curious fact that, as a rule, the gold contains more silver as we go northwards, giving the average fineness of Victoria gold as 96 per cent., New South Wales 93 per cent., and Queensland 87 per cent. He says, however, "These are averages only. It is not to be supposed that there is a regular and consecutive diminution in fineness with every degree of latitude we go north. There are exceptional localities in the north of this colony, as at Rocky river, where the gold is over 90 per cent. To these exceptions we must now add the gold from Mount Morgan.

Having now shortly described the remarkable occurrence and purity of this Mount Morgan gold, a not less interesting, though less satisfactory, fact is this, that only about half the gold is extracted by the ordinary quartz-crushing and amalgamating machinery. The Capricornian says:—"The tailings which are being stored are said to contain as much gold as is saved, and, as they will be subjected to treatment at a future date, the result will be highly advantageous to the owners." Having the small quartz-crushing machinery erected at the Sydney Mint under my charge I have had an opportunity of testing this fact. In November last we received through Mr. Hall, of Sydney, 458 lbs. of this ferruginous quartz, part of it consisting of picked stone. It was carefully crushed and amalgamated in the Chilian mill with 240 lbs. of mercury. Thus 7 41-00 ozs. of gold, assaying 991·5, were extracted. Another lot, weighing 174 lbs., was similarly treated, and 12 12-00 ozs. of gold extracted, assaying 998·2. Thus lot 1 gave gave gold at the rate of 39 32-100 ozs. standard per ton of quartz while lot 2 gave gold at the rate of 169 86-100 ozs. standard per ton of quartz. In lot 1 gold at the rate of 46 ozs. 2 dwts. 12 gr. per ton was left in the tailings, while in lot 2 the tailing assayed 64 ozs. 5 dwts. 18 grs. of gold per ton. Both lots of tailings were now mixed and passed for two hours in the Chilian mill with 240 lbs. clean retorted mercury; only 1 66-100 oz. of gold, assaying ·981, were, however, obtained by this treatment. The tailings were dried, and found to weigh 476 lbs., containing gold at the rate of 41 ozs. 13 dwts. 16 grs. per ton; or in above 476 lbs. tailings no less than 8 ozs. 17 dwts. 3 grs. gold.

I have brought some of these tailings here. Under the microscope, there is no gold visible. I thought that if the oxide of iron were removed by boiling the tailings in hydrochloric acid, and the solution filtered off, the gold might more readily be discernible in the boiled-out residue. I found, however, that this was not the case, and that 1000 grs. of tailings thus boiled in strong hydrochloric acid, by which about 20 per cent. were dissolved, gave me only 0·730 grs. of pure gold, while 1000 grs. of the original tailings, not boiled out, gave 1·306 grs. of gold, the same as when boiled out within nitric acid. The loss of gold by boiling in hydrochloric acid was no doubt due to the action of this acid upon manganese in the ore, whereby chlorine gas was formed, a ready solvent for gold. That the ordinary amalgamating Chilian mill did not extract all the gold in this stone I can only atttribute to the supposition that the oxide of iron has literally coated some of the fine gold, thus preventing it from coming in contact with the mercury. For such class of ore Plattner's chlorination process, if worked on a large scale, ought to be highly successful. I am glad to hear that arrangements have been made by which the tailings will presently be treated at the mine by the chlorination process, whereby the gold is dissolved by an aqueous solution of chlorine gas, and precipitated by hydro-sulphuric acid. It would, however, be interesting to see whether some or any of the numerous patent gold-extracting machineries or appliances would be able to overcome the difficulty, and to treat economically and successfully these tailings or the original ore. That it would be of great advantage both to a patentee and the owners of this mine is evident. While on this subject I may be permitted to allude to the want in this colony of a mining laboratory, supplied with all the appliances not only for examining ores, but for extracting by the most approved methods their metalliferous treasures on a large scale. Of course, such an establishment would be both extensive and expensive, but while giving valuable aid to mining enterprise it would be made not only self-supporting, but remunerative. All depends on its organisation and suitability to our wants.

PETROLEUM AND SALT IN SOUTHERN RUSSIA.

Petroleum has, says Consul-General Perry, of Odessa, in his recent report, become one of the most important Russian exports, the wells at Baku being apparently inexhaustible, and capable of supplying a minimum quantity of 100,000,000 poods—or (say), 1,600,000 tons of oil per annum. In 1883, however, owing to the want of rolling stock on the Transcaucasian Railway, only 5,000,000 poods, or 80,000 tons, were transhipped to Batoum, whence part was shipped to Southern Russia, a large portion to Turkey and the Mediterranean, the balance going to Roumania and England. Were a pipe put down between the Caspian and Black Sea, and increased facilities given on the railways, Russian petroleum would soon drive the American article out of Eastern European markets, as it has already done out of Russia, although in this latter case the protective duty must also be taken into consideration.

The narrow-minded politicians of the Moscow school who stopped the Caucasus transit, with a view to developing the refining the oil in the country, have now commenced to advocate an export duty on crude oil of 10 c. a pood, or (say) 2½d. per 36 lbs. English, whereas in reality the Baku petroleum trade, both as regards crude oil and kerosene, is anything but flourishing, and languishes from the following causes:—1. Want of capital and the non-existence of private banks at Baku, where discount ranges at from 15 per cent. to 20 per cent. per annum on the best local drafts.—2. Competition of the different companies, who in order to raise cash occasionally sell their oil under the price of production, and have thus brought down the shares of the various undertakings to 20 per cent. of what they cost at par.—3. The want of a pipe on the American system from Baku to Batoum.—4. The want of rolling stock on the Transcaucasian Railway especially adapted for the transport of petroleum; but as this railway, through the abolition of the transport of goods in transit, can no longer pay its way, and has to fall back on the Government, the directors naturally exclaim, "We have no funds, and even if we had, why should we increase our rolling stock which the putting down of a pipe may render useless?"—5. Want of wharves and a breakwater at Batoum, where during the winter steamers can only load on an average two or three days a week.—6. The high rate of freights charged by the Russian Steam Navigation Company's steamers from Batoum to Odessa, and other northern ports of the Black Sea; they having practically the monopoly of the coasting trade of the Black Sea, the only exception being some half dozen small steamers belonging to private firms. The wholesale price of kerosene or burning oil during the year was as low as 70 c., or (say) 1s. 4½d. per pood of 36 lbs., English, and as high as 2s. 2½d. The retail price at Odessa is 1d. per English lb.

The abolition in 1882 of the excise on salt has opened an entirely new trade in this article, and developed the production of bay salt in the lagoons, on the coast of the Black Sea. The first cargo of salt was shipped at Sevastopol in July, 1883, per steamship Rhone, and was followed by two others, all for Cronstadt, since which several local and Crimean salt merchants have gone seriously into the trade, and a number of boats have been chartered to load during the month of May, 1884, at Otchakoff, Eupatoria, Arabat, Tchokrak, Genitchesk, and Odessa. As enquiries are being made for vessels to load at other salt stations, such as Sivash and Saki, there is evidently an intention of shipping a large portion of the South Russian bay salt to the Baltic. The ports of delivery range from Libau to Cronstadt, thus including Bolderaa, Riga, Regal, and Narva. Several salt refineries are being built in Cronstadt and Libau, as it is hoped that the salt trade from the Black Sea will be extensively developed.

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Mr. S. J. DAVEY, mine share-dealer, Redruth (Aug. 28), writes:—Our market has been dull this week. Carn Brea shares fell ¼; East Pool, ½; South Crofty, 1; West Frances, ¼; and West Kitty, 1. Dolcoaths advanced to 74, fell to 72, and are 72½ to 73 to-day. Cornish smelters have reduced tin standards 2s. Subjoined are the closing quotations:—Carn Brea, 3¾ to 4; Cook's Kitchen, 8 to 10; Dolcoath, 72½ to 73½; East Pool, 41½ to 42; Killifreth, ¾ to ⅞; New Cook's Kitchen, 1 to 1⅛; New Kitty, 1¼ to 1⅜; Pedn-an-drea, ⅜ to ⅝; Polberro, 1⅜ to 2; South Condurrow, 8⅞ to 9⅛; South Crofty, 2 to 3; South Wheal Frances, 7 to 7⅛; Tincroft, 6 to 7; Trevaunance, 1¼ to 1⅜; West Basset, 2¾ to3; West Frances, 5¼ to 5¾; West Kitty, 10¼ to 10¾; West Wheal Seton, 3½ to 4; Wheal Agar, 16¾ to 17⅛; Wheal Basset, 2½ to 3; Wheal Grenville, 6 to 6¼; Wheal Peevor, ⅜ to ⅝; Wheal Kitty, ⅜ to ⅝; Wheal Coates, 2s. to 4s.

— Messrs. ABBOTT and WICKETT, stock and share brokers, Redruth (Aug. 28) write:—The market has been flat this week in sympathy with tin, and most shares are weaker. Dolcoath, Tincroft, East Pool, and West Kitty have been offered at low prices. The tin standard have been reduced 2l. this afternoon. Closing prices herewith:—Camborne Vean, ⅛ to ¼; Carn Brea, 3⅝ to 3⅞; Cook's Kitchen, 8 to 9; Dolcoath, 72½ to 73; East Blue Hills, ⅛ to ⅜; East Pool, 41¾ to 42¼; Killifreth, ¼ to ⅜; New Cook's Kitchen, 1 to 1⅛; New Kitty, 1¼ to 1⅜; Pedn-an-drea, ¼ to ⅜; Polberro, 1½ to 2; South Condurrow, 8¾ to 9¼; South Kitty, ⅛ to ¼; South Crofty, 3 to 3½; South Frances, 7⅛ to 7¾; Tincroft, 6 to 6½; West Basset, 3 to 3¼; West Kitty, 10¼ to 10¾; West Frances, 5⅝ to 5⅞; West Seton, 4 to 4⅛; Wheal Agar, 17 to 17⅛; Wheal Basset, 2¾ to 3¼; Wheal Grenville, 6 to 6⅛; Wheal Kitty, ½ to ¾.

— Mr. M. W. BAWDEN, Liskeard (Aug. 28), writes:—The mining market is quiet, and business mostly confined to the usual settlement. Carn Brea, Cook's Kitchen, South Frances, Tincroft, and West Kitty are being offered at lower rates. Subjoined are the closing quotations:—Anderton United, ⅛ to ¼; Bedford United, 1¼ to 1⅜; Carn Brea, 3¾ to 3⅞; Cook's Kitchen, 8¾ to 9; Dolcoath, 72½ to 73; Devon Consols, 2½ to 2¾; East Caradon, ½ to ¾; East Pool, 41⅛ to 42; Glasgow Caradon, ¾ to ⅞; Gunnislake (Clitters), ¼ to ⅜; Killifreth, ¼ to ⅜; Marke Valley, ⅛ to ¼; Old Gunnislake, ⅛ to ¼; Pedn-an-drea, ⅜ to ⅝; Phœnix United, 2¼ to 2½; Prince of Wales, ⅛ to ¼; South Caradon, ⅞ to 1; South Condurrow, 8½ to 8¾; South Crofty, 3¾ to 4; South Devon United, ⅛ to ¼; South Frances, 7¼ to 7½; St. Just United, 5¾ to 6; Tincroft, 6¾ to 7; West Basset, 2¾ to 3; West Caradon, ⅛ to ¼; West Frances, 5¼ to 5½; West Kitty, 10 to 10¼; West Crebor, ⅛ to ¼; West Phœnix, ⅛ to ¼; Wheal Agar, 16½ to 17; Wheal Crebor, 1 to 1⅛; Wheal Grenville, 5¾ to 6; Wheal Kitty, ⅜ to ¾.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, share-brokers, Queen's Chambers, Market-street (Aug. 28), write:—Apart from the fact of the fortnightly settlement taking place this week, and the consequent diminution of new business during its progress, the tone of the markets, except for special things, is dull, and operators appear to be indisposed to enter into engagements to any extent. While this is the case, and the public find such little encouragement to invest in railway securities as traffic returns give, figures cannot hope to make very decided further advance. On the whole home rails are lower, but not severely so. Foreign bonds have received a check on their upward career, this market being led chiefly from Continental Bourses. Paris being most closely watched and followed as being the pulse for most of this class of investment. Only Russians show any advance whatever, and it is very slight. Egyptians record quotable change in Unified, which are ⅝, and Preference 1¼ lower. The alteration in the Daira Sanieh Bonds is only partial, sellers asking ¼ less without change in buyers' quotation. Several others quote fractionally easier, but do not call for special mention. The market for Colonial Government Bonds keeps good, and again what changes there are to notice are favourable, consisting of a rise of ½ each in Canada Four per Cents., New South Wales Four per Cents., South Australian Four per Cent. Inscribed, and Victoria Four per Cent. Inscribed. Corporation stocks and debentures have a similar record, the following:—Liverpool Three-and-a-Half per Cent. being ⅛ to ¼, Manchester Four per Cent. 1½, and Manchester Three-and-a Half per Cent. ½ to 2 higher, and no instance of decline to report. Mexican railway stock showed fairly good up to the traffic announcement, returning a decrease of 6600l., and on this value fell away quickly, but have recovered 1 to 1½ from the lowest points touched. The aggregate of business in miscellaneous classes is but meagre, but viewed as a whole balance of movement in prices is pretty well maintained.

BANKS.—Nothing but solitary dealings reported save in Manchester and Liverpool Districts and Manchester and Salfords, several transactions in which are marked. Quotations steady or better, except in Union of Manchester, which are ½ easier.—Higher: Bank of Liverpool, ½; Liverpool Commercial, ⅛; and Manchester and Salford, ⅛.

INSURANCE shares neglected as regards dealings, there being only one transaction—in Boiler Insurance and Steam-Power—to record.—Higher: Boiler Insurance and Steam-Power, ⅜; Liverpool and London and Globe, ¼; British and Foreign Marine, ⅛; and Reliance Marine, ⅛ lower.—Lower: Commercial Union, ⅛; United Fire Re-Insurance, ⅛; Royal Liverpool, ⅛; Lancashire, 1⁄16 to 1⁄8; and Queen, 1⁄16.

COAL IRON, &c., AND MINING.—Hardly any lots changing hands.—Higher: Sheepbridge, A, 1⅛ to 1¼; John Browns, ⅛ to ¼; Cammells, ⅛; and Ebbw Vale, ⅛.—Lower: West Cumberland, ⅛; Earle's Shipbuilding, 1⅛; and a few others fractionally.

COTTON SPINNING, &c., shares about steady, with little doing, owing to approach of holidays in the Oldham district.

TELEGRAPHS quiet, Anglo Ordinary and Preference and Directs lower.—TELEPHONES.—Some few dealings in Liverpool and Cheshires, which, along with Uniteds, are rather easier.—MISCELLANEOUS.—Manchester Carriage and Trams, Southport Trams, and Ryland's better. Gas Light and Coke, A Ordinary, have declined 1.

RAILWAYS.—Prices rather easier, and business restricted. Traffics continue disheartening, showing trade to be bad. Anticipations of stock being more plentiful at the account began the downward movement, and proving correct from the change in continuation rates, the movement continued, and the tone is dull. Canadians have fluctuated somewhat. On the publication of the traffic return to-day, some free selling took place; but the heavy "backs" on First and Second Preferences prevent liberty being taken with them. In a few weeks traffics have to compare against larger totals, so the comparison may prove still more discouraging. Americans have gone down heavily, more especially Louisville, New York Centrals, Illinois, Denvers, and Wabash Preference, and to-day an article in a London paper on their finances has particularly affected the last named.

NEWCASTLE-ON-TYNE.—Mr. S. N. Challoner, Grey-street (Aug. 28) writes:—Barrow Steel Ordinary shares are firm; Ordinary 5½ to 5⅝; 6 per cent. Preference at 8⅞ to 9, being both ¼ higher. Bede Metal are without change, at 10 to 10½. Bolckows lower; fully-paid ⅜ at 15½ to 15¾, and 12 paid ½ at 8⅛ to 8¼; 5 per cent. ¼ at 18½ to 18⅜. C. Cammell and Co. remain at 7 to 7½; Consett Iron, 17 to 17¼, ex div.; Consett Spanish Ore, 70s. to 80s., ex div.; Darlington Iron, 21s. to 23s., and 7 per cent. pref., 3 to 3½; John Abbott, 49 to 50. John Brown, at 60¼ to 60¾ are ¼ higher. Earle's Shipbuilding, at 9¼ to 9½, are 1⅛ lower. Ebbw Vales remain at 4¼ to 4⅛. Palmer's are firmer, on a dividend at the rate of 6 per cent. per annum. B shares, at 14½ to 15, are 1 higher. A, at 24 to 24½, are without change. Sir W. G. Armstrong, Mitchell, and Co., 125 to 126; Teeside Iron Ordinary, ⅛ to ¼; West Cumberland Iron, at 4 to 4⅛, are ⅛ lower. Panuicillo remain 3⅛ to 4. Mason and Barry, 10⅛ to 10⅜; but Rio Tinto, at 16⅛ to 16⅜, are ⅜ lower. Hartlepool Gas and Water, A, remain at 10 to 10⅛; B, 8⅛ to 8⅜; C, 7⅛ to 7⅜; Newcastle Gas, 177 to 180; Newcastle Water, 204 to 208; High Gosforth Park, 19 to 20. Langdales are ⅛ higher, at 4 to 4⅛; Lawes, ⅛, at 5⅛ to 5⅛. Newcastle Chemicals remain 27s. 6d. to 30s. Sudier Forbes Abbot B shares are firmer, at 15 to 15⅛; a dividend of 25 per cent. is recommended; the C shares, 5l. paid, remain at 4¼ to 5.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, stockbroker and ironbroker (Aug. 28), writes:—During the past week the markets have been quiet, and prices are generally lower, owing to the quiet reports of trade, and the opening of hostilities between France and China. The fortnightly settlement is now in progress, and transactions entered into are for new account, Sept. 11.

In shares of coal, iron, and steel companies prices are steady. Bolckow, Vaughans lower, as no interim dividend will be paid at present. Shotts Iron shares higher, on the lease announced of their shale fields to the Walkinshaw Oil Company. Cardiff and Swansea are 40s. to 50s.; West Cumberland, 4⅛ to 5; and Wigan, 29 to 31.

In shares of foreign copper and lead concerns business is quiet. Tharsis remain at 6l. 7s. to 6l. 7s. 6d. Nedenes o cred. Lake Superior are 6s. to 8s.; Sentein, 2s. 6d.; Taunus Silver-lead (preference), 2s. 6d; and Tocopilla, 2s. 6d. to 5s.

In shares of home mines prices are generally easier. Blue Hills are 2s. to 4s.; Camborne Vean, 3s. to 5s.; Cook's Kitchen, 8 to 9; Devon Friendship, 2s. to 3s.; East Botallack, 10s. to 12s. 6d.; East Blue Hills, 4s. to 6s.; East Craven Moor, 1s. 6d.; Ecton, 17s. 6d. to 22s. 6d.; East Van, 3s. 9d. to 6s. 3d.; Gorsedd and Merilyn, 6s. 6d.; Great Laxey, 9 to 9⅛; Killifreth, 6s. to 8s.; Leadhills, 30s. to 35s.; Marke Valley, 10s. to 12s. 6d.; North Busy, 2s.; New Kitty, 25s. to 30s.; New Cook's Kitchen, 25s. to 27s. 6d.; Old Gunnislake, 2s. to 4s.; Pedn-an-drea, 7s. to 9s.; Prince of Wales, 3s. to 5s.; Phœnix United, 20s. to 40s.; St. Just United, 6 to 6⅛; South Crofty, 55s. to 65s.; South Darren, 3s. 9d. to 55s.; Tincroft, 7 to 7⅛; Trevaunance, 27s. 6d. to 30s.; West Frances, 5⅛ to 6; West Kitty, 10 to 11; West Holway, 2s. 6d.; West Phœnix, 5s. to 7s.; West Crebor, 2s. to 3s.; Wheal Basset, 65s. to 70s.; West Poldice, 3s. to 5s.; Wheal Agar, 17 to 17⅛; Wheal Basset, 60s. to 70s.; Wheal Cornford, 2s. 6d. to 5s.; Wheal Jane, 1s. 6d. to 2s. 6d.; Wheal Kitty, 10s. to 12s. 6d.; and Wheal Uny, 2s. 6d. to 5s.

In shares of gold and silver mines there is no particular alteration to notice. Montanas have been sold from 39s. 3d. to 40s. 3d.; Richmonds and United Mexicans easier. Vizcaya Santander offered. Antioquia are at 4s. to 8s.; Chontales, 3s. to 4s.; Callao Bis. 7s. to 8s.; Chili, 3s. to 4s.; Consolidated Silver, 1s. 6d. to 2s.; Don Pedro, 3s. to 5s.; Frontino, 18s. 9d. to 20s.; Gold Coast (preference), 10s. to 12s. 6d.; Kimberley North Block, 27s. 6d. to 42s. 6d.; Kohinoor B, 2s. to 3s.; Lisbon-Berlyn, 10s. to 12s. 6d.; New Potosi, 9s. to 11s. 3d.; New Emma, 12s. 6d. to 15s.; Organos, 13s. to 15s.; Schwabe Gully Diamond, 5⅛ to 6; Sutro Tunnel, 1s. 3d.; Tecoma, 1s.; Tacquah, 1s.; Victoria, 8s. to 9s.; and West Callao 2s. to 3s.

In shares of local and miscellaneous companies the principal business has been in Nobel's Explosive, which have declined from 17 to 15⅛. Lanark Oil shares have been largely dealt in, and are much oversold; as the company is understood to be doing well the shares may rise before the "bears" get closed. Droitwich Salt are at 1s. to 15s.; Elmore and Company (debentures), 28. Halkyn Drainage shares offered. Home Mines Trust, 16s. to 18s.; and Lawes' Chemicals, 5 to 5⅛.

N.B.—Owing to the holidays the issue of this report will be discontinued for a few weeks.

TOLIMA MINING COMPANY.—Advices received by the mail of Aug. 27, of which the following is an abstract:—

Frias June returns		$25,899·3
,, ,, cost	$20,857·0½	
Less charged in April	1,500·0=	19,357·0½
Estimated net profit		$ 7,542·2½

Equal in sterling to 1257l. 1s. 0½d.

	Fms.	Ft.	In.
The underground report shows	41	5	3
of ground expended, of which	11	5	6
were unproductive, leaving	29	5	9
of productive ground.			

The superintendent reports a decidedly improved ore prospect favourably influencing our immediate proximate returns, and I trust making up in a certain degree for the falling off in the bonanza workings. This improvement has occurred in the 20 fm. south-west level. He then goes on to say that in the end and backs of this level a fine course of ore is being laid open, the yield of which as seen yesterday, he adds, I estimate to range from 2 to 5 tons per fathom of high-class mineral. Although in all probability the available extent of ore ground upwards may be limited in height, we confidently hope to find a good lode holding downwards as deep as our deepest levels can touch it. The superintendent continues that the mine throughout, notwithstanding frequent fluctuations, has a sound and healthy appearance, and it is merely a question of time and of the extension of our deep pioneer levels to the required distance, especially westwards, to ensure results which no one can say shall not equal anything which has already been accomplished at Frias.

Underground Report—Engine-shaft: Uniform although not very rapid progress has been made in sinking during the month. The vein in the sole is about 9 ft. in width, composed of slate and quartz, the main leader being 18 in. in width, having finely-polished striated faces, and very highly charged with arsenical and iron pyrites, but yielding nothing to save or value.—80 Fm. East: After an improvement which set in early in the month there has been a falling off, the 8 in. mixture of rich pyrites and galena having almost given out. The end has been extended about 19 fms. from shaft, and is now penetrating a corresponding twitch in the vein to that passed through in the 70 east, so that I expect another improvement shortly.—80 Fm. West: We are driving on the south branch or leader of the vein, the end being extended a total distance of 8 fms. from shaft. The leader is about 12 in. wide, carrying an inch string of solid ore, blende, galena, and pyrites of good grade, and liberating large quantities of water.—70 Fm. East: This end is within about 3 fms. from being beneath the Esperanza shaft. The vein continues broken and disordered, consisting of quartz and light-coloured silicious schist, carrying pyrites on the northern portion of a dark shaly matrix in the south part of the vein. The lode is considerably influenced here by its proximity to the south vein; it is quite poor.

70 Fm. No. 1 Cross-cut North: This cross-cut having reached the north wall of the south lode at a distance of 14 fms. from the end in level, we have commenced to drive east upon some small strings of ore existing in the vein. Insufficient work has been done as yet to prove the probable value of this mineral.—70 Fm. No. 2 Cross-cut North: This has been driven 7 fms. from main level; but without reaching the hanging-wall of the main lode in the Bonanza section. The end of the cross-cut is penetrating a compact and hard schist, and will be continued until an exhaustive trial in this direction has been made.—Rogers's Winze: This winze has been sunk to a depth of 57 ft. under the 70. The vein in the sole is from 6 to 8 ft. in width, carrying branches of blendiferous mineral of medium grade, ranging from 15 to 25 cwts. per fathom of export ore. As soon as the plane of the 80 is reached we propose driving east and west from the winze with the object of expeditiously opening up what we expect will be a rich section of contiguous stoping ground.—70 Fm. No. 3 Cross-cut South: A new cross-cut has been commenced 45 ft. east of No. 2 cross-cut with the object of driving through the portion of lode left standing in this section on account of its apparent unproductiveness. The cross-cut will more effectually prove whether the lode is mineralised or not to the footwall.

Stopes: The various stopes in the back and bottom of the 70 continue to yield average quantities of mineral, ranging from 20 to 40 cwts. of export ore per fm.—60 Fm. Level West: This level has been driven 80 fms. west of shaft. The vein is 5 ft. in width, the branch followed being the southerly one, corresponding with bearing and direction of the 20 fm. south-west level. The leader in the end carries a 6 in. branch of quartz, intermixed with blende and galena, and although not of saving value as yet, I consider our striking a productive lode here is merely a question of driving the required distance to overtake the dip of the 20 south-west mineral towards us. This may occur at any point between the present end and the unexplored ground in advance of us, and standing whole to the 20—40 fms. in thickness. The north branch of the vein in the 60 is not at present being operated upon pending the urging forward of the south-west leader above referred to.

Esperanza Shaft: This has been sunk to a depth of 40 ft. under the 60. There is a large lode of schist and quartz, carrying spots of blende in the sole, with dark shale in the footwall, the lode being very similar in character to that seen in the 70 fm. east end.—60 Fm. West Bottom Stopes, West of Shaft: Good average mineral is being raised, the yield ranging from 15 to 25 cwts. per fathom of export ore.—60 Fm. Back Stope East: A limited amount of stoping ground is available here, the yield ranging from 15 to 20 cwts. per fathom of export ore.

Bonanza Workings: A sink and short stope are being prosecuted against the hanging-wall of the vein in these workings about midway between the 60 and 70 fm. levels upon a 3 in. branch of almost solid mineral of high grade; it is to intersect this wall, and, as we trust, the ore lying against it, that the 70 fm. No. 2 cross-cut is being driven.

40 Fm. Level West: This end is 48 fms. west of engine-shaft. The vein is 4 ft. wide, composed of carbonate of lime, quartz, and dark coloured schist, with an admixture of pyrites and occasional stones of blende. The lode carries very regular walls, and its present bearing coincides with that of the 20 fm. south-west. This drive is about being carried forward with all possible speed.—20 Fms. South-West Level: I have to report a decided improvement in this level, the end containing a fine course of rich class mineral, valued at from 2 to 3 tons per fathom. The end in the back of the level is still richer, being valued at from 5 to 6 tons of export ore per fathom, the ore branch or productive leader over the end being 2 ft. thick, of a fine mixture of galena, blende, and pyrites. We are not yet able to say to what unworked height this ore remains intact upwards, but is certain that it was pretty extensively operated upon in former years from the adit downwards. It would appear that the same combination of favourable circumstances exists on the western section of the mine as existed on the bonanza workings in the eastern section—the junction of two veins with a cross-course—the south-west ore being evidently produced by the junction of Pitt's vein and the Powder-house lode with the western cross-course in the same manner as the bonanza deposit, was caused by the junction of the main lode with Welton's vein and the eastern cross-course.

Ore prospects from south-west vein, taking the length of orey ground as yet driven through by the south-west level, it may be assumed that we have 20 fms. in length almost as good as proved along the sole of this level. In a sink commenced near the north-east extremity we find a 6 in. almost solid branch holding down on a rapid north-east dip; as far as proved (6 ft.) this ore is of exceptionally rich quality, yielding by assay nearly 700 ozs. of silver per ton. We are counting upon striking the same course of mineral in the 40, the 60, the 70, and the 80, all making towards it, with still deeper levels in project as the engine-shaft is also further deepened. Of course the continuity of the ore downwards might be broken, and we might be disappointed, but all the indications are thus far in our favour.

Surface Operations: Good progress is being made in the mechanics' department, the principal works in hand being in connection with the preparatory operations for the erection of the new machinery, new workshops, and store-houses are being erected, foundations for the new crushers are being built, the laundering for the new water-wheel put in position, and matters generally are in active progress.

Satandiji Mine: I have to report an improvement in the ore of the 12 east, in which there is an almost solid 3 in. branch of blende, galena and pyrites carrying grey silver. A splendid stone of ore broken from the end of this level 2 in. in width, composed of about half quartz and half pure grey silver sulphide, is valued at sight at the rate of several thousand ounces per ton. In the engine-shaft there is also an improvement, the vein carrying a 2 in. leader of quartz spotted throughout with galena. In the 12 west we commenced a cross-cut south near the end in order to intersect the southerly branch of vein on which the adit branch is being sunk. In this cross level we struck a small leader of mineral galena and blende, but further exploration is necessary before pronouncing positively respecting it. In the adit winze fair progress is being made with the sinking.

DEATH IN THE MINE.—For something like four years a Royal Commission has been visiting all our mining districts, taking evidence and making experiments, with a view to showing how the serious loss of life which annually takes place in our coal mines could be prevented. So far as the preliminary reports go, it would appear that most attention has been devoted to the means of preventing explosions from accumulations or outbursts of gas, although the fatalities from these are much less than from other causes, and during the last two or three years have decreased in a marked degree. This has been prominently brought under notice by one of Her Majesty's Inspectors of Mines in the reports just issued. We are told that the percentage of the total loss of life last year for the whole of the kingdom was—Explosion of fire-damp, 12·7; falls of roof and sides, 44·5; in shafts, 9·2; miscellaneous underground, 23·3; and on the surface 10·3. Seeing, therefore, that nearly one-half of the fatalities in our mines are from falls of roof and sides, a large proportion of which are really preventable, it has been suggested that a special enquiry with regard to such accidents, with a view to showing how they can be sensibly lessened, as it is too much to expect that they can be altogether prevented, could not fail to be of the greatest advantage with working miners.

Mining Correspondence.

BRITISH MINES.

BEDFORD UNITED.—H. Trezise, Aug. 26: The 138 east, on the north lode is being driven by six men, and good progress is being made; the lode is taken down, but there is every indication of an improvement. The tribute pitches on the north lode continue to look fairly well.—Bridge Lode: In the 75 east the lode is without alteration. In the same level west the lode is 2 ft. wide, and very promising for a speedy improvement. I am very hopeful that we shall soon see a good lode in the end. In the 62 west the lode is taken down, good progress is being made in driving the end in a good channel of ground very congenial for the production of copper ore. Two stopes below the 62 west are worth 5l. per fathom each. Four pitches at the same level are worth 6l. per fathom each, and two east of shaft at the same level are worth 8l. per fathom each. In the 62 east the lode is composed of strong capels, mundic, and ore. The 42 east is unproductive. Two stopes in the back of the 42 are worth 9l. per fathom each. Two in the bottom of the 42 are worth 5l. per fathom each, and two pitches west at the same level will yield 2 tons of ore, or 5l. per fathom each. We calculate to sample about the usual quantity of good ore.

BLUE HILLS.—William Rich, Aug. 26: There has not been satisfactory progress made in driving the 66 east, nor in the rise in back of this level. The men have been frequently engaged in patching the pitwork, which is in a bad state. We are making preparations to put in a few new pumps in the bottom lift, and put down two new plunger-poles. When this work is accomplished we hope to keep the shaftmen constantly employed in the end and rise referred to, where the lode has a most promising appearance for yielding tin. We have cut through the lode in the 50 east, and find it is from 7 to 8 ft. wide—a strong, kindly lode worth 8l. to 10l. per fm. The level is now being urged on east on the course of the lode into whole ground. The 40 end, east of Joy's shaft, is being pushed forward; the lode yields low quality tinstone, and looks likely to improve. We have cleared and secured the 30 eastward for a great many fathoms, and hope in a few days to have it cleared t Joy's shaft.

CASHWELL LEAD.—John Peart, Aug. 23: The heading next to the deep forehead in copper hazle going west is poor at the top, but has good ore in the low part; will average 1 ton of lead ore per fathom. The heading coming east in this stratum is looking very well at the top, but the low part, where we are at present working, is poor and not much vein; the poor piece is only 2 fms. in length and the same in height, so that it will fast work out. We know we have good ore close to us; at present it is worth 15 cwts. of lead ore per fathom. The drift going west in copper hazle has been poor for several weeks; in fact we had no ore worth saving, but this week we have got some nice bouse; the vein from appearance looks like opening out into good ore again, but will be able to tell more in another week. The drift going east in copper hazle is much the same, a little more vein and ore. We have weighed over this week for the executors of Joseph Denning 60 tons of lead ore.

CARN CAMBORNE.—W. C. Vivian, Aug. 28: In the 105, west of engine-shaft, cross-cut, the lode continues of about the same character and productiveness as when last reported. In the winze sinking under the 95 to communicate with the 105 referred to, the appearances are also presenting no change worthy of particular description.

CREGIOG.—H. Hotchkis, Aug. 27: Meadow Shaft: The 130 yard level west of shaft is making usual progress; lode from 2 to 3 ft. wide, of the same character as for some time past. East of shaft at this depth the lode is a little more open near the bottom of the end, and a little wider than when I informed you last. There are nice patches of blende in this end.

DEVON FRIENDSHIP.—F. R. W. Daw, Aug. 28: The value of the points underground is about the same as reported to you last week. The calciner and general surface work is progressing satisfactorily.

DEVON GREAT CONSOLS.—Isaac Richards, Aug. 28: Wheal Maria: The cutting of top plat at the adit level is proceeding very satisfactorily, and we hope to complete it in the course of a few days.—Wheal Emma: Railway Shaft: In Bray's cross-cut south at the 220 the ground is of rather a hard nature, consequently progress in driving is slow. In Richards' cross-cut south at the 190 east the south part of the lode has been intersected and cut through, proving 2 ft. wide, and composed of capel and quartz, with a little good quality copper and mundic ores.—Watson's: In the 112, west of the engine-shaft, the lode maintains a good size—5 ft. wide, and continues to yield 2 tons of copper and mundic ores per fathom. In Dunstan's winze sinking below the 88, west of the engine-shaft, the lode is 3 ft. wide, and is yielding some saving work of copper and mundic ores. In the 32, east of the western shaft, the lode is also 3 ft. wide, and also yields some saving work of copper and mundic ores. All the other points of operation throughout the mines are without important alteration.

DEVON GREAT UNITED.—Isaac Richards, Aug. 28: In the 120, east of Willesford's shaft, the drivage is being continued by the side of the lode. In the 120, west of Willesford's shaft, the lode is 3½ ft. wide, of a promising character, and yielding some saving work of copper and mundic ores. In the 60, west of Watson's shaft, the lode is 3 ft. wide, composed of capel and quartz, with some good quality arsenical mundic and copper ore. There is no important alteration at any of the other points of operation throughout the mine.

EAST BLUE HILLS.—S. Bennetts, W. K. Mitchell, Aug. 27: The lode in the 10 fm. level west end is not quite so wide as it has been, but it is equally productive, and worth from 8l. to 9l. per fathom. In the east end at this level the lode is from 5 to 6 ft. wide, and worth from 10l. to 11l. per fathom. So soon as the skip-road is completed to the 10 preparations will be made forthwith for sinking the shaft below.

EAST CARADON.—W. George, J. Kellow, Aug. 28: The 150 cross-cut south from the engine-shaft is being continued with the boring-machine by nine men, at 12l. 10s. per fathom. There is no change in the ground to notice, although we meet with occasional small branches containing copper and mundic. A pair of men are employed to put a stope over the bottom of the 130 on one of the south branches at 40s. per fathom. When near the cross-course it will produce full ¼ ton of ore per fathom, and, thinking it probable, another branch will be put into this a short distance below the level we consider it a promising point. There are three tribute pitches set to six men, at 13s. 4s. in 1l.

EAST WHEAL ROSE.—Wm. Skewis, T. Doldge, R. Gill, Aug. 25: Pennan engine-shaft is drained to the 90. Here we have to cut ground for bearers and cistern, &c., before we can drop below this level. This work will have our attention forthwith. The shaft will also have to be divided and cased and footway fixed completely to that level, in order to ensure speedy and safe passage for men and drawing purposes. North Wheal Rose is also drained to the 90, and arrangements are being made to convey a full supply of air to the bottom of the shaft, so that men may be able to work with greater safety. When this is complete we anticipate great progress in reaching the bottom of the mine. The machinery is in good order. All other matters are about the same as last reported.

ECTON.—W. Bowman, Aug. 25: I have to report steady, though not very rapid, progress during the past week, and the character of our ends of development has made no important change. The new pile of pitwork in Clayton shaft is completed down to the 70 fm. level, and we are commencing pumping again to-day. So soon as all is working well our shaftmen will commence putting in the footway below the 5½, so as to gain access to the wide range of open ground north of the engine-shaft. The water-bank shaftmen are putting in skips between the engine-room and 45 fm. level, which interferes with our fixing the compressing machinery, on account of its being so near the shaft; but I hope this trial will soon be over, and allow of our making better progress. In Eaton deep adit we have got past the worst part without much difficulty; but the pressure of the loose stuff is very great upon the advancing timbers. The reservoir supplying water for our works is nearly dry, and we are cleaning out a part of it near the supply-valve, which will be a great advantage in clearing the supply. We pump river water into our main pipes with small steam-pump whilst this work is being done.

GAWTON.—George Rowe, Aug. 23: In cross-cutting the north part of the lode at the 117 east we find it principally composed of capel, spar, and arsenical mundic, and yielding good stones of ore. The lode in the 95 east is 5 ft. wide, composed of capel and arsenical mundic, yielding 10 tons per fm. The lode in the rise in back of this level continues to yield 10 tons of arsenical mundic per fathom. All the stopes throughout the mine continue without change.

GLASGOW CARADON CONSOLS.—Wm. Taylor, William J. Taylor, Aug. 25: The ground in the 126 cross-cut, beyond Harvey's lode, is of the most favourable description for ore, and letting out a little water; but possibly we may have 2 or 3 fms. yet to reach the south lode, or it may be very near; this will depend on the underlay. In this channel of ground we expect to cut it good. We are pushing it on as fast as possible. As soon as we can possibly get to work we shall commence opening on Harvey's lode in this level, worth from 10l. to 12l. per fm. There is no change to notice in either of the winzes in bottom of the 1 4, or Harvey's. No. 1 is worth 10l. per fm., and No. 2 15l. per fm.; these are opening good stoping ground. The winze commenced to sink on the south lode is on a north part, worth 5l. per fm.; this will soon fall in with the south lode, and be more valuable. We commence here, being the most convenient point, and easy ground. Our object is to get through to the 126 fathom level, to ventilate it as early as possible. We are now opening up some good ore ground, and anxiously looking forward to the cutting of the south lode, which is still a very important point to come off.

GOODEVERE.—R. Knott, Aug. 27: I am pleased to inform you that the lode in the winze sinking below the shallow adit level has much improved during the past week. We have noticed from time to time that the greater portion of the tin raised in the adit has been towards the bottom of the level; it thus appeared that the level was skirting along the top of a course of tin, and I am pleased to say that the winze above referred to has, so far, proved this to be the case. The lode in said winze is now about 5 ft. wide, producing good work for tin, and presenting a most promising appearance for further improvement.

GREEN HURTH.—James Polglase, Aug. 26: The shaft is without change. The vein in the 44 north is not rich for lead at the present moment, but a strong looking vein. No. 1 stope is worth 2½ tons per fm.; No. 2 stope, 3 tons; No. 3 stope, 2 tons; No. 4 stope, 5 tons; and No. 5 stope, in back of Standard level, 5 tons per fathom. The vein north at Trial drift is producing good lead; I can scarcely quote its value for a short time. In the adit level east the vein is displaced by a small cross vein. We are only making slow progress in the adit level, on No. 3 vein, the level being entirely broken down. Dressing going on well.

GUNNISLAKE (CLITTERS).—John C. Seccombe, C. W. Seccombe, Aug. 21: The lode in the 236 east is poor for the time, but we hope this end will improve as we get away from the influence of the cross-course. The lode in rise in back of this level west is worth 7l. per fathom. The lode in the 224 west is poor. The lode in the 212 east is of a very promising character, worth 5l. per fathom. The lode in rise in back of this level west is worth 6l. per fm. The rise in back of this level east is communicated to the 200, and given good ventilation to the 212 end, and also opened up available ground for stoping. The lode in the 200 east is worth 5l. per fathom. The lode in the 188 east is producing good saving work for copper ore. The lode in the 164 east is 2 ft. wide, and worth 4l. per fathom. The lode in the 128 west is 3 ft. wide, composed chiefly of capel, spar, peach, and occasional stones of copper ore, but not to value.

HEALEYFIELD.—Jno. Trelease, Aug. 22: There is not much change in the stopes in the old mine; they are worth respectively 8, 12, and 15 cwts. of lead per fathom. We will crush up all the bouse we have, and will raise from 18 to 20 tons of No. 1 ore. The engineer has nearly completed the alterations to the engine.

KILLIFRETH.—J. Michell, J. Tamblyn, Aug. 28: Engine-shaft: The 90 fm. level driving west by three men and three boys, where the lode is getting more defined and the ground easier for driving. The 70 end driving west by three

men and three boys; the lode 3 ft. wide, and producing a little tin, with every appearance of an early improvement. Four stopes in the back of this level by 12 men and 12 boys; lode worth on an average 12*l.* per fathom. The 50 end east by two men and two boys; lode 1½ ft. wide, producing good stones of tin. Winze sinking below this level west of shaft, and within 9 fms. to cross-course, by three men and three boys; lode worth 14*l.* per fathom. The 30 end east by two men and two boys; lode improving in appearance, now producing stones of tin.—**Hawkes' Shaft:** To sink below the 50 by three men and six boys; lode 1 ft. wide, worth 15*l.* per fathom. The 50 end west by two men and two boys; lode 2 ft. wide, looking kindly, producing a little tinstone. One stope in the back of this level by two men and two boys; lode worth 7*l.* per fathom. We have commenced to sink two winzes in the bottom of this level, one east of shaft by three men and three boys, lode worth 10*l.* per fathom; and one west Hawkes' shaft will drain the water from these two winzes; if so it will enable us to cut out a good section of ground in a short time. The 40 end west by two men and two boys; lode 3 ft. wide, of a very promising character. We have six tribute pitches working by 20 men at an average tribute of 10s. 3d. in 1*l.*

KIT HILL GREAT CONSOLS.—Isaac Richards, Aug. 23: At the tunnel level we are still passing through the lode referred to in former reports, and are now into it 26 ft. For this width it consists of capel and quartz, with a little mundic and traces of tin ore. The distance driven during the past week is 1 fm. 4 ft. We have been hindered some time during the past week to admit of an inspection of the boiler and our steam-engine by the Boiler Insurance Company's agent.—**North Engine-Shaft:** In the north engine-shaft, sinking below the 100, the lode (part carrying 6 ft. wide) is composed of very fine capel and quartz, with peach, mundic, and a little tin ore. In the 100, both east and west, the lode (part carrying from 4 to 5 ft. wide) continues of a most promising character, and is yielding a little tin ore. In the rise in the back of the 88 west the lode (part being carried 4 ft. wide) is composed of capel, with peach, quartz, mundic, blende, and a little tin ore.

LLANGELYNIN.—Owen Evans, Aug. 28: The lode in the north end of the winze in No. 2 level is rather better, and the ground easier, and in the south end the lode is about 2 ft. 9 in. wide, and worth about 2 tons of rich quality blende per fathom nicely spotted with lead. The south end of No. 3 level is looking a little better, with graphite of about 15 to 20 per cent., but I expect when we come to stope away the ground above that we shall fall in with pockets of pure graphite.

MELLANEAR.—John Gilbert, Aug. 27: In the winze sinking below the 30, south of Gundry's shaft, the lode is 1 ft. wide, and yielding saving work for copper, lead, and blende. It is also better defined than it was, and looking kindly for an improvement. We have intersected a branch about 6 in. wide in the 70 cross-cut, north from the main lode; it is composed of spar and mundic, and letting out a little water, but it does not appear to be worth driving on. The south part of the lode in the 90, driving west of Gundry's shaft, is 2½ ft. wide, and still yielding 2 tons of copper ore per fathom. In the 100, west of shaft, the lode is 5 ft. wide, and yielding 3½ tons of ore per fathom; this end is further west than any productive ground in the levels above. The lode in the 110, east of shaft, is 3½ ft. wide, yielding ½ ton of copper ore per fathom and some saving work for tin, and letting out a good deal of water. In the 110, west of shaft, the lode is 5 ft. wide, yielding ½ ton of copper ore per fathom and some low-produce tinstuff, but still very hard for driving. The lode in the 120, east of shaft, is 3 ft. wide, and yielding 1 ton of ore per fathom. In the 120, west of shaft, the lode is 4 ft. wide, and yielding 2½ tons of ore per fathom. The lode in Gundry's engine-shaft, sinking below the 120, is 4 ft. wide, and yielding 2 tons of ore per fathom, and looking more promising. There is no change in any other part of the mine.

MID-DEVON COPPER.—James Neill, Aug. 23: **A Shaft:** Water has risen to within 6 ft. of the 70 fm. plat. The water-wheel is making nearly two revolutions per minute.—**C Shaft:** The stope in back of the cross-cut north from the 50 east, worked by four men, continues to be worked in two different directions, where the strata is most promising, and shows the most ore. The present yield is about 18 cwts. per cubic fathom, and the general features indicate a greater yield.

MOUNTS BAY CONSOLS.—Capts. Wm. Argall, T. Job, Aug. 23: During the last fortnight in clearing Pengersick shaft we have had some water. We at once fixed whim, cased and divided the shaft 11 fms. below the adit, and in the coming week we shall commence clearing the shaft again. The tribute pitches are looking just the same as last month. We have commenced to prepare another parcel of tin.

NEW CARADON.—N. Richards, Aug. 27: There is no particular change to notice in the cross-cuts driving north of No. 1 lode at the 50. I stated in a former report that three lodes had been intersected in the 20 which have not been seen in the 50. This being a deeper point we consider the lodes should be seen here before we resume the sinking of the shaft. We should then know more of their character, their distance from the shaft, and have a better idea of the length of time it would take to reach them after the sinking of the shaft was commenced.

NEW KITTY.—W. Vivian, Aug. 28: At Thomas's shaft, sinking below the 20, the lode continues to improve at this point, and is producing splendid stones of tin and copper ore. From the present appearance of the lode I am hoping we shall soon have a good course of tin at this point. No change to notice in the other points of operation since last report.

NEW LANGFORD.—T. Gregory, Aug. 27: We are making good progress in the 30, west of engine-shaft; some good stones of silver-lead are found as we advance. The lode in the 10, west of engine-shaft, maintains its full size, and is improving for lead ore. A pitch below the 20, east of engine-shaft, has improved during the past week, and is looking fairly well for a further improvement. There is no other change to notice; engine and pitwork working well. One of the tributers who had a piece of lode to take down in his pitch on Saturday last has now taken the same down, and we find it has improved for silver; at the present time produces over 100 ozs. to the ton, as per assay, which I enclose herewith. I hope this will continue away into new ground. I have directed the men to go on to work as fast as they possibly can. The lode is small at this point, but very promising for silver. Assay, per J. Jenkin, of Callington; produce, 112 ozs. 5 dwts. 20 grs. of silver per ton.

NEW TERRAS.—R. Eade, Aug. 28: We have completed the plat in the flat-rod, or water, shaft, and reached water about the depth we anticipated, and we are now busy fixing the gear for lifting the water. The lode in the deepest adit is yielding good work for tin, whilst that in the great stopes at the 20 fm. at engine shaft is also giving the usual quality of tinstone.

NEW WEST CARADON.—N. Richards, Aug. 27: No. 5 lode east at the 38 has been taken down, and although it is over 3 ft. wide, and producing much fluor-spar, it is not at present producing much copper ore; but judging from its appearance we have reason to believe that we shall soon be in ore again. This lode west at this level is improving; it is about 3 ft. wide, producing fluor-spar and peach mixed with some rich copper ore, with every appearance of an early improvement. There is no change to notice in the cross-cut driving south.

NORTH BUSY UNITED.—John James, Aug. 26: Last Saturday we set the following bargains:—The 15 cross-cut to drive south, by three men and three boys, at 1*l.* 15s. per fathom the month, or cut the lode. We have this day cut a lode in the cross-cut, which produces some good stones of copper and mundic, but being mixed and close to cross-course as soon as we get through the lode we shall commence to drive east, and have no doubt that we shall open up some good ground. The 15 to drive west on No. 1 copper lode, by two men, at 45s. per fathom. The 15 to drive east on No. 1 copper lode, by two men, at 35s. per fathom. A stope in the back of this level, by two men, at 25s. per fathom. Also a stope in back of this level west, by two men, at 25s. per fathom. This copper lode opened on has produced about ¼ ton of copper ore per fathom for the whole length opened.

NORTH GREEN HURTH.—Jas. Polglase, Aug. 20: The south end shows bits of lead at times; the vein is very similar in appearance. Nothing new in the other bargans.

OWEN VEAN AND TREGURTHA DOWNS.—William Derry, Henry Prin, Verrant James, Aug. 28: We have little new to report this week. The men are making good progress with the 67 cross-cut south. The end and stopes throughout the mine are yielding tinstuff of the usual quality. The stamps and all the other machinery are working well, and everything possible is being done to complete the dressing-floors and calciner, that justice may be done to the mine by our monthly sales. We expect to be ready to discontinue burning at Carbis in a month from this date.

PAR.—Thomas Parkyn, Aug. 28: The men are making good progress in sinking the engine-shaft. The ground is a little harder, but not to interfere with the men, as very little powder has been used yet. In the cross-cut driving from the adit north towards the shaft the ground is hard in the back, but is very good in the bottom of the level, and we are making fair progress here as well. The whim-round will be completed next week, when the horse-whim will be at once erected.

POLBERRO.—Wm. Vivian, Aug. 28: We are pushing on the work in the engine-shaft with all speed. Our tribute ground continues to produce its usual quantity of tin. We shall have a small parcel of tin ready for the smelting-house in a few days.

PRINCE OF WALES.—S. Roberts, Aug. 26: In the 102 east we are driving by the side of the lode, which is 3 ft. wide; producing good copper ore, and worth 6*l.* per fathom for tin. Stope in back of this end lode 3½ ft. wide; worth 1 ton of copper ore and 8*l.* per fathom for tin. In the 90 west we have an increase of water from the side of the new silver lode, and a course of dark capels intermixed with copper ore, which evidently shows the main lode to be near at hand.

ROMAN GRAVELS.—Arthur Waters and Son, Aug. 28: The 125, going north of new engine-shaft, is in a narrow lode, at present the yield of ore being 1 ton per fathom. The stope behind the end is worth 30 cwts. per fathom. The 125, going south of the above shaft, is worth 30 cwts. per fathom. The 110, south of Blockley's winze south of shaft, is worth 1 ton per fathom. The two stopes in this level, north of said winze, and the four stopes south of it are worth together 14¼ tons per fm. The stope in 110 south of flat-rod shaft, is worth 2½ tons per fathom. The 95 south is worth 1 ton per fathom. Four stopes in this level south of Morris's winze, are together worth 9 tons per fathom. One stope north of ditto 2½ tons per fathom. The stope south of Roberts' winze is worth 2 tons per fathom. The 80 south is now up to a point, where the lode is split into three divisions, which no doubt will form a junction again as the end approaches the shale, against which we expect a bunch of ore. The three stopes in this level, south of Jones' winze, are worth 8 tons per fathom. We sample against next week.

RUSSELL UNITED.—J. Bray, Aug. 28: Matthews' engine-shaft is 27 fms. below the 97; we purpose sinking 2 fms. deeper before taking down the lode. In that level we shall commence the cross-cut north to intersect the north lode, which we hope to reach in about 12 or 14 fms., also to drive east from the shaft if the lode should prove productive. Nothing new to report at Stephens's shaft since my last.

SOUTH CONDURROW.—Wm. Rich, Wm. Williams, H. King, Aug. 27: The lode in the back of the 93, east of King's shaft, is worth 12*l.* per fathom. The 80 end east is worth 7*l.* per fathom; the stope in the back of this level is worth 12*l.* per fathom. The 80 end, west of Plantation, carries good stones of tin. The 70 end east is worth 8*l.* per fathom. The stope in the back of the 70 is worth 15*l.* per fathom. The 60 end east yields low quality tinstone. The stope in the back is worth 10*l.* per fathom. The winze in the bottom of the 60 is worth 15*l.* per fathom. The 50 end, east of engine-shaft, is worth 8*l.* per fathom; the stope in the back is worth 10*l.* per fathom. The 40 end east is worth 15*l.* per fathom. The 30 end west yields a little tin. The rise in the back of the 20 fm. level is worth 8*l.* per fathom. We are urging on the sinking of Pendarves' engine-shaft. There is no material alteration to notice in the ends driving west of Marshall's shaft.

SOUTH DARREN.—John Mitchell, Aug. 21: The following bargains were set on Saturday last for one month:—To cut out ground for bob pit at the 60, by four men, at 7*l.* per fathom for sinking, and 4*l.* per fathom for widening. To drive the 130 west, by four men, at 9*l.* 12s. 6d. per fathom. To stope No. 1 stope in the 130 west, by four men, at 3*l.* 12s. 6d. per fathom. To stope No. 2 stope in the 130 west, by four men, at 3*l.* 10s. per fathom. To stope No. 1 stope in the 120 east, by four men, at 3*l.* 10s. per fathom. To stope No. 2 stope in the 110 west, by four men, at 3*l.* 15s. per fathom. The filling of the skips at 7s. 9d. per 100 skips. The landing of the skips at 5s. 8d. per 100 skips. The lode in the 130 west is wide, and very hard for driving, and worth 2 tons of silver-lead ore per fathom. No 1 stope in the 130 fathom level west is getting wider as we go up, and is worth 2 tons of silver-lead ore per fathom. No. 2 stope is worth on an average 1½ ton silver-lead ore per fathom. No. 1 stope in the 120 fm. level east is worth 15 cwts. silver-lead and 10 cwts. of copper ore per fm. No. 2 stope in the 110 west is worth 1¼ ton silver-lead per fathom. Drawing and dressing is going on regularly, but we still have a very short supply of water.

SOUTH DARREN.—J. Mitchell, Aug. 28: The lode in the 130 west has improved a little since last week, and is at present worth 2½ tons silver-lead ore per fathom. All other points of operation maintain the same values as given in my setting report, which unfortunately was late for last Thursday's post. Work underground and at surface is being pushed on as fast as possible.

SOUTH DEVON.—W. Hooper, Aug. 28: We have not been able to work in the bottom of Martin's shaft during the past week in consequence of the scarcity of water at surface not being sufficient to keep the shaft drained for the men to work, consequently there is no change in the size or value of the lode since last reported on. The sinking of the above shaft be resumed at once if we get an increase of water. These men are now employed in repairing Brookwood engine-shaft and doing other necessary repairs to the levels, &c. The lode in the 120, west of the above, is 4 ft. wide, with a value of 14*l.* per fathom. From the appearance of the end to-day we are evidently nearing a small cross-course, and no doubt it is the same we passed through in the 110 over this point, where the lode west of same was found to be very productive for many fathoms in length. I fully anticipate meeting with equal, if not better, results at this level. We have every reason to expect it from the fact that this end has been found to be much more productive than the 110 over this. Driven during the past week 3 ft. The lode in the stope in the back of this level is from 3 to 4 ft. wide, of a very promising description; worth fully 14*l.* per fathom. In the winze sinking below the adit level, west of the old engine-shaft, the lode presents much the same character as for some time past, composed of gossan, spar, with good stones of ore. We are getting on well with the dressing, and shall have a good sampling.

SOUTH FRANCES.—C. Craze, Aug. 27: There is no change in Pascoe's shaft since my last; in fact, we have not been able to do anything by way of sinking, as we have been changing some main rods, &c., at Marriott's shaft, which has thrown some water in the bottom of the mine. The same remark will apply to the driving of the 236 ends both east and west. The 226 east has for some time been in a fairly good lode, and which is now worth 22*l.* per fathom. The rise in the back behind this end is worth 25*l.* per fathom; and a winze coming down on this rise from the 215 east is worth 30*l.* per fathom for 9 ft. long. We are pushing forward the rising and sinking as fast as possible, so as to lay open this important piece of ground for stoping. The winze sinking below the 226 west is worth 35*l.* per fathom for 12 ft. long; and one other stope in the bottom of this level is worth 22*l.* per fathom. No. 1 stope, in the back of this level, is worth 18*l.* per fathom, No. 2 stope is worth 15*l.* per fathom, and No. 3 stope is worth 12*l.* per fathom. Two stopes in the 185 east are worth 12*l.* per fathom each, and two stopes in the same level west are worth 15*l.* and 18*l.* respectively. At Marriott's shaft we have fixed bearers, &c., at the 155 for cistern and new pitwork, and are progressing fairly well with all the other work. Daubuz's shaft is being sunk with fair speed; there is no change in the winze being sunk on the lode at the 58, except that as we sink we are meeting with good stones of tin occasionally. Nothing else calling for further remark at present.

SOUTH TOLCARNE.—J. Jennings, Aug. 27: The 70 west of cross-cut on the flat lode continues to produce stamping work; the produce is improving. Taylor's lode continues to be about 3 ft. wide, and worth from 10s. to 12*l.* per fathom for tin and copper. In the shaft on gossan lode sinking under the 36 the lode is fully 2 ft. wide, producing stones of copper and tin. The other points present no change.

STANDARD LEAD.—W. H. Borlase, Aug. 28: The lode in the 45, west of engine-shaft during the past week, has not been so productive as for some time previous, but I am pleased to say the falling off was only temporary, and the forebreast is again producing splendid blende with stones of lead. Through having no water for winding purposes, most of our stopes and passes are full of orestuff, and I have removed the men to rise against the new shaft and others to start the shaft from surface until such time as I shall think it expedient to increase the number of men to carry on these points independently of our usual stopes, &c. I hope soon to be suited with a winding-drum; in the meantime the excavation for wheel and raising of stone for the loadings will be proceeded with. Everything will be done to secure despatch whilst the dry season lasts. I have every confidence in opening up a good and lasting mine when the new shaft is sunk below the 33 on Goddard's, or north and south lode.

TREGONTREES AND OLD POLGOOTH CONSOLS.—R. B. Fastnedge, Aug. 28: Since my last report to you no change of importance has taken place. From our surface workings I expect a little improvement in the bottom, more especially from the level on St. Martin's lode.—**Mulva:** We have now driven 8 fms. on the western end, and with a gradually continuous improvement. The eastern end is driven about 3 fms.; the lode is about 3 ft. wide, and still carrying very fine stones of tin. I propose here putting on two more men. Incline to adit level is being pushed on as fast as possible, and will, I trust, be completed on Saturday, including winding and hauling gear. Machinery, &c., all working well.

TREVAUNANCE.—Wm. Vivian, Aug. 28: We have nine men sinking the engine-shaft. Next week I purpose to put six men more to drive and rise against the shaft. The 55, driving east on the copper lode, is worth 15*l.* per fathom. Our tribute ground continues to produce low-quality tinstuff.

WEST CARADON.—N. Richards, Aug. 27: Gilpin's lode, in the 38 west, together with the surrounding stratum, appears at present to be of a more congenial character for the production of copper ore than for some time past. A rise and two stopes in the back of the adit level on this lode will yield together 2¼ tons of copper ore per fathom. A stope in the bottom of this level will yield 1 ton of ore per fathom.

WEST CREBOR.—J. Andrews, Aug. 27: There is no change in the mine since reported on for the general meeting held last Friday.

WEST GODOLPHIN.—T. Hodge, Aug. 27: We have nothing new to report this week. Friday next being setting-day, when a full report shall be sent you.

WEST KITTY.—Wm. Vivian, Aug. 28: In the 64 fm. level driving east the lode is worth 9*l.* per fathom. In the 72 fm. level driving east the lode is worth 16*l.* per fathom. In the 60 fm. level driving east of rise the lode is worth 15*l.* per fathom. In the 60 fm. level driving west of cross-cut the lode is worth 8*l.* per fathom. In the 60 fm. level driving east of cross-cut the lode is worth 18*l.* per fathom. In the 50 fm. level driving east of No. 1 rise the lode is worth 9*l.* per fathom. Driving east of No. 2 rise the lode is worth 15*l.* per fathom. We have four stopes working worth from 15*l.* to 50*l.* per fathom.

WEST POLBREEN.—Wm. Vivian, Aug. 28: We have resumed the sinking of the engine-shaft as it is now quite dry. There is no change to notice in the 40 fathom level west since last report.

WHEAL AGAR.—W. C. Trevena, Aug. 25: Setting Report: The 225 is being driven east of engine-shaft, by six men, at 11*l.* per fathom, where the lode is worth for tin 25*l.* per fathom. No. 1 stope behind this end is worth for tin 35*l.* per fathom, and stoping by 10 men, at 5s. 6d. per ton. No. 2 stope, east of rise, is worth for tin 20*l.* per fathom, and stoping by nine men, at 6s. per ton. The winze sinking below the 215 east of shaft, is worth for tin 15*l.* per fathom, and sinking by six men, at 12*l.* per fathom. We shall communicate this with the 225 in a few days, which will give us a thorough ventilation for extending our levels east. The 215 east on the south lode is being driven east of cross-course, by six men, at 8*l.* 10s. per fathom, and is worth for tin 15*l.* per fathom. A rise commenced behind this end is worth for tin 10*l.* per fathom, and rising by four men, at 7*l.* per fathom. We have four stopes working in the bottom of the 215, by 36 men, at 5s. 9d. per ton of stuff, and the lode is worth on an average 21*l.* per fathom. The 205 is being driven east of cross-course, by six men, at 7*l.* 10s. per fathom, where the lode is worth for tin 12*l.* per fathom. The end driving west of cross-course, by six men, at 6*l.* per fathom, is worth for tin 12*l.* per fm. The 205 is driving east of cross-cut, by six men, at 8*l.* 10s. per fathom, and the lode is worth for tin 10*l.* per fathom. There are three stopes working in the bottom of the 205, by 30 men, at 6s. 4d. per ton of stuff, where the lode is worth on an average 18*l.* per fathom. The lode in the winze sinking below the 195 is worth for tin 15*l.* per fathom, and sinking by three men, at 10*l.* per fathom. This will be holed in the course of this week, and lay open a large section of rich tin ground. The rise above the 195 against the new shaft is rising, by nine men and machine, at 12*l.* per fathom. The rise in the back of the 150 against the new shaft is rising, by nine men and machine, at 12*l.* per fathom. A contract to hole to the shaft. The new shaft is sinking below the 120, by 12 men, at 24*l.* per fathom. A contract to communicate with the 150 rise, which we expect to accomplish before our next pay and setting. At surface we are clearing foundations for the new whim, and shall be urging forward this work for the masons and engineers.

WHEAL BENNY.—Thomas Cocking, Aug. 28: Our second water-wheel is now completed with the exception of painting, which will be finished by the end of the week. The erection of the launders, &c., will be immediately got on with. We are now making preparations to carry our line of rods for pumping through the deep adit level, by doing which will save at least 25 fms. of hanging-rod in the shaft, besides the additional length of rods from the wheel to the shaft at surface. All underground operations are much as when last reported. We shall have a batch of tin ready for sale by the end of next week. All the machinery is in good working order.

WHEAL CREBOR.—H. Phillips, P. D. Holman, Aug. 26: The new shaft will be down the required depth on Friday next for the 156; the lode contains spar, intermixed with mundic. The lode in the 144, driving east of new shaft, is 5 ft. wide, yielding 1 ton of copper ore and 1 ton of arsenical mundic per fathom. The stope east of winze sunk below the 132, east of new shaft, will yield 7 tons of copper ore and 2 tons of mundic per fathom. The stope west of said winze will yield 8 tons of copper ore per fathom. The stope in back of this level will yield 3 tons of ore and 2 tons of mundic per fathom. The lode in the 108, driving east of new shaft, is 2 ft. wide, chiefly composed of capel. The part of the lode carried in the 72, driving east of new shaft, contains capel, intermixed with mundic. The lode in the winze sinking below the 48, east of new shaft, will yield 3 tons of ore and 2 tons of mundic per fathom. The stope in the back of this level will yield 4 tons of ore and 4 tons of mundic per fathom. There is no change in the 48, driving east of new shaft, since last reported. There is no change in the 144 cross-cut, driving south, during the week. The stope in the back of this level, west of new shaft, will yield 3 tons of ore and 4 tons of mundic per fathom.

WHEAL GRENVILLE.—T. Hodge, Aug. 26: Everything is going on here in a satisfactory manner. Saturday next is our setting, when a full report will be forwarded to the office. We shall sell on Thursday next our usual quantity of tin.

WHEAL PEEVOR.—W. T. White, Aug. 28: We are pleased to say we have cut the new tin lode in the 16 cross-cut north within 1 ft. of this distance, stated at the time the ground was dialled for driving the cross-cut. We have cut into the lode about 2 ft., but have not yet reached the north wall. We assayed a sample of the stuff broken, and it made a produce of 56 lbs. of black tin to the ton of stuff. We also took a sample from the mealy (or soft) part as well, which was strongly mixed with mundic, and this made a produce of 4½ cwts. This being the first point below the workings in the deep adit, on this lode, we attach the greatest importance to it, and we hope now in the course of a few days to effect communication with this cross-cut and the end driving west of winze in bottom of the deep adit. We shall then lay open a good section of tin ground that can be worked to a good advantage, which up to the present we have not been in a position to do. We value the lode in the cross-cut as far as seen at 8*l.* per fathom, and the same for the lode in the end west of winze, mentioned above. All the shoots of tin we have on this lode are dipping westward, and we verily believe from its very promising appearance we shall raise large quantities of tin therefrom. This is a side lode, and is standing whole throughout the mine. As soon as convenient we shall commence sinking a winze below the 16, in order to push forward its development below that point; this we hope to do in another fortnight. All other points on this lode are without change. The driving of the 60 cross-cut south to intersect Peevor Bottoms and other lodes is, we consider, most important, and if driven to the extremity of the sett in this direction we firmly believe good discoveries will be made. The price now paid for driving this is 8*l.* per fathom. The driving of the 48 cross-cut north, on Great North Downs lode, is also being pushed forward. This cross-cut is being driven partly in the cross-course, consequently any lodes met with would be likely to be a little disordered. We have passed through some tin branches, the last one of these we think to be part of the New Tin lode, which we intend driving on. The sinking of the new shaft, on Great North Downs lode, is being pushed on, and the lode is looking very promising. Our tribute pitches are yielding to the number of men fair quantities of tin.

THE MANUFACTURE OF ALUMINIUM.

Heretofore, aluminium has always been made by treating its chloride with metallic sodium as a reducing agent. But the great trouble in handling this material, and its very high cost, have made such a process difficult and expensive—the price of aluminium at present being higher per ounce troy than silver. This has limited its uses and its manufacture in commercial quantities to the sole factory in Paris, France. William Frishmuth, a German chemist living in Philadelphia, and a pupil of Woehler, who discovered aluminium, has, says the New York Engineering and Mining Journal, been working for 28 years to solve the problem of making cheap aluminium in commercial quantities. Within the past few years he has discovered and secured patents throughout most of the civilised world, for a process that now produces aluminium in a commercial way at one-third the cost of any other, with almost a certainty of being reduced to $1·25 per pound avoirdupois when worked in a large plant, with proper technical and practical management, ample capital, and perfected mechanical and chemical means.

Instead of using metallic sodium as before mentioned he uses a vapour, produced or generated in a suitable vessel from a mixture of sodium carbonate, or other suitable compound of sodium, and carbon or other reducing agent. And this sodium vapour, not metallic sodium, as used in the Deville process, is made to react in various ways upon the aluminous materials to produce aluminium. Therefore, the economy of the proved Frishmuth process is about as follows, estimated for illustration on a theoretical basis:—The manufacture of 20 lbs. of aluminium requires 115 lbs. of sodium carbonate, at a cent. a pound, or 50 lbs. metallic sodium at from $2·50 to $3·50 a pound. Therefore, 1 lb. of alumium requires by the Deville process, 2½ lbs. metallic sodium, costing from $6·25 to $8·75; or by the Frishmuth process, 6 lbs. sodium carbonate, costing, say, 6 cents. Practical operations are said to increase the quantities by the Deville process to from 3 to 4 lbs. of metallic sodium, and by the Frishmuth process to, say, 12 lbs. sodium carbonate. Both Deville and Frishmuth have to use the double chloride of aluminium and sodium, although Frishmuth has a patent for his successful use of the double fluoride of aluminium and sodium in making aluminium. This is another great item of cost in making this metal. But Frishmuth has made improvements in making the double chloride of aluminium and sodium that reduces its cost to a few cents a pound, and consequently that of the metal. As this double chloride is the cheapest of a few known chemical substances used in making aluminium cheaply and in commercial quantities by chemical or electrical processes, the saving in cost, through such discovery by Frishmuth, in making this metal will be very great, and almost as much as by the use of his sodium mixture in place of metallic sodium.

On account of the use of sodium and chloride, the wear and tear on retorts, crucibles, and apparatus is usually great. But in the apparatus now used in Philadelphia, designed by Frishmuth, this item of cost is much reduced, and will be further reduced when heated by Wilson producer gas instead of coke. The metal is superior in quality to the French, being purer and whiter. Its specific gravity is 2·73. It has been tested in New York, London, and Paris in a commercial way, and can be sold at the market price. All manufacture has been in the experimental and developing way, and Frishmuth has sold metal thus made to the extent of many thousands of ounces. Recently he made in a few days several ingots of 40 ozs. troy each, the quality of which was severely tested. The use of the metal will increase as the price decreases, and when sold eventually, say, at 30 cents an oz., the consumption here and in Europe should be 120,000 ozs. troy a day. It has greatest value as an alloy, especially with silver and copper, as it gives a non-tarnishing and non-corrosive quality to such metals, and greatly increases the tensile strength. Aluminium bronze is made by alloying 10 lbs. of aluminium with 90 lbs. of copper, and has a tensile strength of 3 tons per square inch more than Bessemer steel. Frishmuth has invented a solder for aluminium that welds the metal with itself or with copper, tin, lead, and iron. The colour is the same as the metal. This will greatly increase the use of the metal, and is of great benefit to the arts and industries.

WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,

MINEOWNERS, STOCK AND SHARE DEALERS, &c

1, ST MICHAEL'S ALLEY CORNHILL, LONDON

At the West Crebor meeting, although the accounts showed a balance of liabilities over assets of only 193*l.* 7s. 1d., there were in reality 617*l.* 0s. 1d. shown in the accounts as due to merchants, &c., and the principal credit was for 277*l.* 7s. due on forfeited shares, which may never be recovered. Add to this a cost-sheet for 100*l.* at least, due this week, and an expenditure of 100*l.* a month for the next four months, and it will be seen that a call of 1s. 6d. per share, which was recommended by the committee, was absolutely necessary to carry on the mine, and protect the general body of shareholders. A large shareholder, however, who did not attend the meeting, and had not seen the accounts, sent his proxy to a broker (and shareholder), who attended and opposed anything beyond a call of 1s. (500*l.*) This, the Chairman explained, was insufficient to meet pressing claims, still less future operations, and that if the proxy was used for the purpose of opposing a proper call he should retire from the committee, and his firm would resign the treasurership, which has consisted in making constant advances for the mine. As the proxy was used, and the call of 1s. only carried, he did resign. We may add that we hold 800 shares, and have not lost confidence in the speculation if properly managed, and this it cannot be unless its debts are paid and money provided for monthly costs.

We mention these facts in reply to enquiries *why* Mr. Watson retired from the committee. After to-day there will be no committee unless a meeting is called to appoint one.

We believe the fall in the price of Oscar shares has nothing whatever to do with the state of the mine. The machinery, we hear, will soon be at work, and great things are expected.

At Prince of Wales we are evidently on the eve of a great change in the 92 west, and we hope and trust it may be a good discovery.

One of the pitches at Langford has improved for silver—a sample assayed from it produces 112 ozs. 5 dwts. 20 grs. per ton.

Some time ago correspondents made enquiries respecting the Great Cobar and Nymagee Mining Companies of Sydney. We have this week received full particulars, together with working sections of the mines, but have not had time to go through them yet. We hope to give full and interesting particulars next week.

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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, AUG. 29, 1884.

IRON.	£ s. d.	£ s. d.
Pig, GMB, f.o.b., Clyde	2 1 3-	—
,, Scotch, all No. 1	2 2 0-	—
Bars Welsh, f.o.b. Wales	5 0 0-	—
,, ,, in London	5 10 0-	—
,, Stafford., ,,	6 5 0-	—
,, in Tyne or Tees	5 0 0-	—
,, Swedish, London	9 0 0-	9 10 0
Rails, Welsh, at works	5 0 0-	—
Sheets, Staff., in London	7 5 0-	7 10 0
Plates, ship, in London	7 10 0-	8 0 0
Hoops, Staff.,	6 7 6-	—
Nail rods, Staff., in Lon.	6 5 0-	—
STEEL.		
English spring	12 0 0-13 0 0	
cast	30 0 0-45 0 0	
Swedish, keg	13 0 0-14 0 0	
,, fag. ham.	13 10 0-14 10 0	
Rails at works	4 12 6- 5 0 0	
,, Light, at works	5 12 6- 6 12 6	
LEAD.		
English pig, common	11 0 0-11 5 0	
,, ,, L.B.	11 2 6-11 7 6	
,, ,, W.B.	11 5 0-11 10 0	
,, sheet and bar	12 0 0-	—
,, pipe	12 5 0-	—
,, red	13 5 0-14 0 0	
,, white	14 10 0-15 10 0	
,, patent shot	14 0 0-	—
Spanish	10 10 0-	—
NICKEL.		
Metal per cwt.	— —	—
Ore 10 per cent. per ton.	— —	—
SPELTER.		
Silesian ordinary brands	14 0 0-	—
,, special brands	14 7 6-	—
English Swansea	15 10 0-	—
Sheet zinc	17 10 0-18 0 0	

TIN.	£ s. d.	£ s. d.
English, ingot, f.o.b.	84 0 0-	—
,, bars ,, ,,	85 0 0-	—
,, refined	86 0 0-	—
Australian	81 15 0-	82 5 0
Banca	nom. -	—
Straits	81 12 6-	81 15 0
COPPER.		
Tough cake and ingot	58 0 0-	58 10 0
Best selected	58 10 0-	59 0 0
Sheets and sheathing	64 0 0-	67 0 0
Flat Bottoms	67 0 0-	70 0 0
Wallaroo	61 0 0-	61 10 0
Burra, or P.C.O.	60 0 0-	—
Other brands	58 10 0-	60 0 0
Chili bars, g.o.b.	53 15 0-	—
QUICKSILVER.		
Flasks, 75 lbs., war.	5 10 0-	—
PHOSPHOR BRONZE.		
Alloys I. and II.		£112 0 0
,, V.		118 0 0
,, VI. and VII.		133 0 0
,, XI., Duro A, Duro B		110 0 0
BRASS.		
Wire	6¼d.- —	
Tubes	8½ —	
Sheets	6¾-7¼d.	
Yel. met. sheath. & sheets	5⅝-6 per box	
TIN-PLATES.*		
Charcoal, 1st quality	1 1 0- 1 2 0	
,, 2nd quality	0 18 0- 1 0 0	
Coke, 1st quality	0 16 0- 0 16 6	
,, 2nd quality	0 15 0- 0 16 0	
Black per ton	15 10 0-	—
Canada, Staff. or Gla. at Liverpool	12 0 0-	—
Black Taggers, 450 of 14 × 10	20 0 0-	—

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—The tone of the metal market continues very dull and unhealthy, and the tendency of prices has for the most part been towards lower rates. The prospect seems very gloomy, and attended with much uncertainty, and notwithstanding that we are now brought to the close of the summer season, and next week will be entering into the autumn, a time generally noted for being characterised by greater briskness in trade than any other quarter, yet there seems now but little chance of any revival, and many holders, thoroughly disgusted with the market, are constantly ridding themselves of their stocks at most enormous sacrifices. The principal adverse features which are now influencing the markets are the difficulties existing between France and China, together with the disorganised and unsettled state of the Mincing-lane markets. But behind these unsatisfactory influences, weighty as they are, and powerful as they have proved themselves to be, there is that which ought to stimulate trade, and were these injurious influences removed nearly all that could be wished for to encourage business exists. In the first place trade for a long time past has been bad, and, therefore, there is a great deficiency to be made up. Again, the future wants of the trade would appear likely to be increased after the ingathering of a bountiful harvest, and further business should be greatly augmented by the low current prices of the day. The price of bread has already been reduced, and the consumption thereof will in consequence be probably increased, and cannot similar anticipations be held of metals?

Prices are very low, and, therefore, the demand should be augmented, and the whole wants of the trade enlarged. The price of corn is reduced from a bountiful supply, and a similar remark might be made of some metals, though not of all. At any rate, it matters not from what prices are reduced, whether it be from increased supplies or deficiency in the demand, from political or financial difficulties, or from any other cause, it is their very cheapness that should encourage trade and induce all buyers to fully satisfy their several requirements. Traders may be poorer than what they were, and crippled with recent disasters, but in the cheapness of prices they have facilities for continuing to purchase which they did not enjoy in times of prosperity. A few buyers seem to realise the favourable opportunity, and have already been effecting purchases, but the great mass of consumers and shippers still hold aloof, and limit their purchases to their most urgent requirements. Not only, too, do the cheap prices indicate a large future trade, but many of the markets have so much improved in their statistical position that there is a fair prospect of higher and more remunerative prices being realised.

It would appear, then, that the future is not so black as many would make out, and that when trade is once again set in motion, and those who have been, and are still, out of town return to business, strengthened and invigorated by their vacation, there is reason to believe that trade may be developed and carried on more profitably than it has been during the last few months. At the same time difficulties have to be removed, the feeling of hesitation has to be done away with, confidence has to be restored, and then will those features of a favourable nature, to which so little attention is placed just now, but which are working quietly but surely for the good of the trade, bear their affect upon the market; it may appear bursting suddenly out pushing up prices to much higher figures, and creating general cheerfulness throughout the whole trade.

COPPER.—This market has remained quiet, and prices for Chili bars have been easy, though the reduction that has taken place in prices has not been very great. The position of the market for Chili produce seems very favourable, and almost indicates that prices cannot be kept for long at their present low and unremunerative level. Prices almost as low as they have ever been known before ought certainly to attract the attention of operators, who would, doubtless, do well to avail themselves of the slight concessions holders seem willing to make. The market cannot well continue to be kept down unless any unforeseen circumstance should arise to alter and completely reverse the present features. With heavy deliveries, far above the supplies, and reduced stocks, prices must sooner or later improve, and the chances are that when that improvement commences, it will be sharp, and, perhaps, carried beyond what is generally anticipated.

The statistics that will be out next week may influence the market, particularly if they prove favourable, and it is generally expected that they will; so that, in the course of the next few days, we may see a slight rally in prices, particularly if a little life should be engendered into the prevailing feeling. Buyers of manufactured have been purchasing tolerably freely, and there are a very fair number of enquiries in the market for Indian sheets, at prices slightly higher than those being realised a few weeks back. At the same time, shippers will not very readily pay any material advance, and it is a matter for smelters to decide whether they will not accept any orders that may be offering at the present slightly improved rates, especially as the raw material has been reduced to such very low figures.

IRON.—This market remains steady, but the amount of business doing is extremely small. There is no life or vitality in the market, and but little change has to be reported in any branch. At times during the week the price of Scotch pigs has displayed a hardening tendency, but the shipments are still very small, and, as time progresses they become more and more limited. The comparisons with the last few years are most unfavourable, and prices would doubtless recede considerably were it not that the ill effect was counteracted by a limited production. Hence we find the public stock continues gradually to be reduced. It is, however, still very heavy, and forms a great drag to the market, and figures must be much more reduced before the existing feeling of depression can be thoroughly and effectually removed. The only feature of at all a favourable nature is the reduced production in Scotland, where it seems to be kept within the requirements of the trade, and which may perhaps account for the stiffening tendency occasionally visible in prices for Scotch pigs.

What is requisite is an increased demand; but trade is so terribly slack, that this does not appear likely to be forthcoming yet awhile, and the low prices utterly fail to stimulate it in any way. There are a few sanguine enough to look for some revival during the next few months, but only few, and certainly at present there are not the slightest symptoms of the approach of any such boon to the trade. In makers' iron there is but little doing, and prices are strong, but without showing any further advance. The advices from all of the manufacturing centres are discouraging. At some of the works there is a little better enquiry for sheets, and a few fair orders have been placed for this class of iron; but other descriptions meet with little or no demand, and loud and continuous are the complaints of the small profits that can be realised; in fact, many of the works are selling without any profit at all, and merely keep in operation in the hope of better times later on.

The Glasgow warrant market opened on Monday with a quiet but firm tone, and the quoted price was 41s. 4½d. to 41s. 5d.; and on Tuesday transactions took place between 41s. 5d. and 41s. 5½d., closing with sellers at the higher price; while on Wednesday the market was flat, and prices easier at 41s. 4d. to 41s. 3d. per ton. Yesterday there was a fair business done, and the market was steady at 41s. 3½d. to 41s. 4d., and the closing quotation telegraphed to-day is 41s. 3d. The shipments last week were 9320 tons, against 17,009 tons for the same week of last year, being a decrease of 7689 tons, and which makes the total shipments for the whole of this year 365,229 tons, against 427,150 tons for the same time of last year, and 419,586 tons for the similar period of 1882. The public stock has been further reduced by 467 tons, and now amounts to 585,995 tons, against 586,462 tons last week, whilst the imports of Middlesborough pig-iron into Grangemouth last week were 5926 tons, against 5941 tons for the same week of last year, being a decrease of 15 tons, and which makes a total decrease for the whole of this year compared with last of 5090 tons. A very unfavourable report comes from Middlesborough of the state of that market, and shows that not only is there scarcely any business doing, but likewise there is barely any enquiry. The standard quotation for No. 3 is still 37s.; but there are still many producers who are willing to accept less than this amount, and second-hand parcels are offering as low as 36s. 4½d.

The shipments, although rather better than they were last month, are still very bad, those last week being about 19,000 tons, while the public stock has been reduced by 334 tons. There is a dull demand for manufactured, and prices are unchanged at 5l. 2s. 6d. for bars, 5l. for ship-plates, 4l. 15s. for angles, and 65s. for puddled bars. There is a better tone upon the Wolverhampton market, and more confidence prevails than for some time past, some ironmasters believing that the bottom of the market has been touched for pigs, and are, therefore, satisfying their wants. Derbyshires are quoted at 40s. 6d. to 41s. 6d.; Lincolnshires at 46s.; Staffordshire cinder pigs at 36s. to 40s. There is a slightly better demand for sheets, and certain makers are quoting doubles up 5s., making the present price 7l. 10s. to 7l. 12s. 6d., lattens being 20s. per ton dearer. The market at Birmingham is reported to be in a more favourable position, and there is a larger business doing in hoops and sheets, although prices continue very low and unprofitable. There is a marked absence of buying for export, the chief orders being for local consumption. Prices of marked bars are still quoted at 7l. 10s., and for unbranded iron 5l. 15s. Pigs are steady in price, but there are very few transactions being carried through.

TIN.—This market has been in a very disorganised state, and much lower rates have been accepted. We have on previous occasions pointed out the probability of these reduced rates, and holders finding it impossible to sustain the market have pressed sales considerably, and thus pushed down prices to their present figures. Next week the statistics for the month of August will be published, and then when it is seen what sort of deliveries have taken place during the present month, whether they have exceeded the small deliveries of last month or not, and also whether supplies have been kept under requirements, prices may probably be regulated accordingly, and if any improvement is made in the statistical position of the market then, the reaction of this week may be succeeded by a rebound next. At any rate after so serious a fall it is not unlikely but a sudden turn may take place.

The disturbed state of the market during the week may unnerve many of the weaker holders, and cause them to continue to rid themselves of their stocks, and create no little anxiety among them: but it is scarcely probable that the stronger holders will continue to submit to such heavy sacrificing, unless it should be found that supplies have exceeded the requirements of the trade, in which case they may deem it more advisable to let the market take its downward course unchecked, and thus, if possible, place some check upon forthcoming supplies. The market having closed last night with a very unsettled appearance, has to-day been slightly firmer, although no particular recovery has as yet been effected.

SPELTER has been sold at lower rates this week, and we call ordinaries 14l. per ton.

LEAD is rather easier, with business done; and sellers over at 10l. 10s. for Spanish, and English is quoted at 11l. to 11l. 5s. per ton.

STEEL.—The market is still very quiet, the rail branch of the trade being particularly slack.

TIN-PLATES.—There is not a large business doing, and prices for both cokes and charcoals remain steady.

QUICKSILVER is dearer by 2s. 6d., and firmly held, in consequence of the favourable news from California, referred to in last week's Journal.

The MINING SHARE MARKET continues in a dull and depressed state, and the dealers have been chiefly occupied in the settlement of the usual fortnightly account. The dulness of metals has its influence on the share market, and this week both tin and copper are lower. Among mines dealt in have been Dolcoath at an advance; East Pool, West Frances, Wheal Agar, West Kitty, New Kitty, Bratsberg, Oscar, Wheal Crebor, Prince of Wales.

TIN has been flat, and on Thursday the smelters reduced the standards for ore in Cornwall 2l. per ton, making the price 73l. for common, and 77l. for refined. In shares very little has been doing, and prices remain about the same as last week, when business has been transacted; but in most cases quotations are merely nominal, and give way in pressure of sales, which are difficult to effect. Carn Brea are lower, and leave off 3¼ to 3½; Cook's Kitchen flat, and lower at 8 to 9; Dolcoaths have been rather extensively dealt in, particularly in Cornwall, and advanced to 75, leaving off 72, 74. East Pool quiet. East Blue Hills, 4s. to 6s.; Killifreth, ⅛ to ¼; New Kittys have improved to 1⅜, 1½; South Condurrow, 8½ to 9; South Crofty, 2¾ to 3¼; South Frances, 7 to 7½; West Frances have been in good demand in Cornwall, where shares are being picked up; they advanced to 5¾, 6, and leave off 5½ to 5¾.

West Godolphin, 1 to 1¼; West Phœnix, ⅜ to ½; South Kitty, ⅜ to ½; Tincroft, 7 to 7½; Treasavean, ½ to ⅝; Trevaunance, 1½ to 2; West Basset, 3½ to 3¾; West Kittys have been weaker, and leave off 10 to 10½; Wheal Agar, 16⅞ to 17½; Wheal Basset, 3 to 3⅛; Wheal Grenville, 5⅜ to 6½; Wheal Kitty (St. Agnes), ½ to ¾; Wheal Peevor, ⅜ to ⅝; Polberro, 1⅝ to 1¾; Phœnix, 1⅞ to 2.

COPPER keeps dull, and there is very little business doing in shares. Quotations are mostly nominal. Bedford United, 1¼ to 1½; Devon Great Consols, 2⅞ to 3; Gunnislake (Clitters), 7-16ths to 9-16ths. Wheal Crebor, 1½ to 1¾; the new shaft will be down deep enough for the 156 fm. level this week. Prince of Wales, 4s. to 6s.; the agent writes there is an increase of water from the side of the New Silver lode, and dark capels intermixed with copper ore, which evidently shows the main lode to be near at hand. New West Caradon, ½ to ⅝; this mine is looking better. New Caradon, ½ to 3-16ths; Marke Valley, 9-16ths to 11-16ths; Mellanear, ½ to 1; West Crebor, 1s. to 2s.; West Seton, 3½ to 4; Devon Friendship, 1s. 6d. to 2s. 6d.; Carn Camborne, ⅜ to ½; South Caradon, 11-16ths to 13-16ths.

LEAD is rather easier, and there is not much business doing in shares, which keep at nominal quotations. Vans are quoted 1½ to 1⅝; the new capital is said to be all applied for, and the allotment will take place next week. Great Laxey, 9 to 10; Roman Gravels, 3¼ to 3⅜; Old Shepherds, 9s. to 11s.; East Wheal Rose, ⅜ to ½. New Langford, ½ to ⅝; some of the ore raised from a pitch here has assayed over 100 ozs. of silver to the ton of stuff. Leadhills, 1½ to 1⅝; Weardale, 1½ to 1⅝.

FOREIGN MINES.—It can usually be reported that some business is doing in foreign mines shares even if English be neglected, but this week all are equally done; in fact, there has not been half-a-dozen transactions on any day this week, and when a *bona fide* purchaser presents himself he can make almost his own terms as to price. Akankoo are quoted 5-16ths to 7-16ths; Alamillos, 1⅜ to 1⅝; Almada and Tirito, 3-16ths to 5-16ths; Asia Minor, 3-16ths to 5-16ths; Balkis, ⅜ to ½; Birdseye Creek, ⅜ to ⅝; Bratsberg, 1⅜ to 1⅝; Callao Bis, ½ to ⅝; Cape Copper, 43 to 45; Chile Gold, ⅜ to ½; Chontales, ½ to ¾; Colombian Hydraulic, ⅜ to ½; Colorado United, 1⅜ to 2½; Copiapo, 2⅜ to 2⅝; Fortuna, 2⅜ to 3½; Frontino and Bolivia, ⅜ to ½; Kapanga, 1-16th to 3-16ths; La Plata, 3-16ths to 5-16ths; Linares, 2⅜ to 3½; Lisbon-Berlyn, 7-16ths to 9-16ths; Mason and Barry, 10⅛ to 10½; Montana, 1⅜ to 1⅝; Mysore, ⅜ to ½; New Callao, ½ to 3-16ths; New Emma, ½ to ⅝; New Potosi, ½ to ½; Organos, ⅜ to ⅝; Orita, 1⅛ to 1½; Oscar, ½ to 9-16ths; Panulcillo, 3½ to 4; Quebrada Railway, 3½ to 3⅝; Richmond, 3⅜ to 3⅝; Rio Tinto, 16½ to 16⅝; ditto, Bonds, 100 to 102; Santa Barbara, ½ to ⅝; Schwabs Gully, 5½ to 6; St. John del Rey, 65 to 75; Tharsis Sulphur, 6½ to 6⅝.

Tolima, A, 6½ to 7½; a telegram has been received from the mine: "The amount of profit for the month of July last is over $3000 (500l.). A marked improvement has occurred in the 90 fm. level west." There is an error in the transmission of this message, as there is no 90 fm. level, and the board consider that the "20 fm. level west" is referred to. A dividend on the A and B share capital of the company at the rate of 10l. per cent. per annum for the seven months ended Dec. 31, has been this day declared, and will be payable on Sept. 13. United Mexican, 2⅜ to 3½; the usual weekly telegram says:—"Excess of return over outlay in the mine of San Cayetano de la Ovejera for the week ended Aug. 23, was $6000; excess of outlay in El Diamante, $300. I intend remitting by next mail $20,000." West Callao, ⅛ to 3-16ths; Western Andes, 4⅜ to 5½.

The MARKET for MINE SHARES on the Stock Exchange, which a fortnight since showed gratifying signs of revival, has now entirely lost the improvement. Metals are all weaker, and the price of ore has naturally followed; the standard for tin was lowered 2l. per ton on Thursday, and there is little prospect of early recovery. The price of shares is almost without exception lower, and it is extremely difficult to find purchasers, even at a large percentage below the nominal quotation. The half-dozen shares which are most heard of in the market maintain their price solely through the exertions of the promoters, or those who are endeavouring to make the market—the public are buying scarcely anything. The only redeeming feature is that mining forms no exception to the rule—share business is excessively dull in every direction. That the present extreme depression is merely temporary is, however, the general opinion, and consequently several new undertakings which are in process of formation, are obtaining many subscriptions privately in order to ensure greater strength when a favourable opportunity occurs for coming before the public.

Our usual telegram from Cornwall this evening says:—During the past week the Cornish Mine Share Market has been dull, with few transactions in shares. The weak state of the tin market caused the Cornish smelters yesterday to reduce the tin standards by 2l. per ton. The standards now are—common 73s., superior common 75s., and refined 77s. per cwt. The margin for profit at the present time between smelter and miner is about 8s. per cwt. The decline in the standards having been anticipated it had little or no effect on shares. Dolcoath continues to open up most satisfactorily, but shows a drop on the week, although closing better. East Pools have been rather weaker, but have rallied a little. West Kitty and Wheal Agar remain firm, with not much doing, whilst Tincroft close better, after being knocked back. Dealings in other shares have been restricted, prices in some instances being weaker.

Devon Great Consols, 3 to 3⅛; the operations will be commenced next week in the Maria part of the mine to sink the shaft below the adit level, where good results are expected. The 112 west at Watson's yields 2 tons of mineral per fathom, and the other points are about the same as last reported.

Devon Great United, ½ to ⅝; the 120 west of Willesford's and the 60 west of Watson's are looking better for the production of copper and mundic ores.

Drakewalls, 4s. to 6s.; the accident to the boiler has somewhat hindered operations, but it is satisfactory to learn that the steam whim will be ready to work again in a few days, when operations will be vigorously carried on in clearing out the shaft to the bottom level.

Kit Hill, ⅛ to ¼; at the Tunnel level they have already driven into a lode 26 ft. wide, and are not yet through it. The lode in the north engine-shaft sinking below the 100, and the 100 east and west, are all looking well for the production of tin ore.

South Devon, ⅜ to ½; the lode in Martin's shaft is worth 20l. per fathom, and in the 120 west it is worth 14l. per fathom. The stope in the back of this level is also worth 14l. per fathom.

Frontino and Bolivia, ⅜ to ½; during June 2705 tons (of 20 cwts.) from general mines produced (average 12 dwts. per ton) 1637 ozs.; gold bought, 83 ozs.: total, 1720 ozs. Estimated value of the gold, including exchange, 5384l.; cost at the mines, at Medellin and in London, 5285l. 7s.; monthly allowance for freight, commission on gold sales and sundry fluctuating outlays not immediately ascertainable (estimated at) 250l.; paid for gold bought of tributers, 231l., equal to 5766l. 7s., leaving estimated loss 382l. 7s. At Antioquia the mineral and attle crushed during June yielded 133 ozs. of gold, estimated worth 360l. 18s.; whilst the cost at mines, Medellin, and London was 326l. 17s., leaving profit 34l. 1s., against which 156l. was expended on capital account.

London and South African Exploration, 5½ to 6½; the company have advice of remittances amounting to 5000l. for the last four weeks, making, with 35,170l. previously advised, a total of 40,170l. for 36 weeks.

Schwabs Gully, 5½ to 6; the statement for the month ended June 30 shows that the quantity of diamonds found during that period amounted to 2264¾ carats, which were valued at 2693l., or about 22s. per carat; and the quantity of blue ground on the floors at that date was 12,073 loads. Diamonds to the extent of 1322 carats were sold, realising 1408l., or rather over 21s. 3½d. per carat, during the month. The total working expenses were 2213l. 19s. As, according to the Kimberley Independent of July 21, the figures for the year ended June showed that the diamonds had been sold at an average of 25s. per carat, the value of the stones obtained from the mine would appear to be diminishing.

Ruby and Dunderberg, ¾ to 1; a slight improvement is noticeable in the report this week generally. A fresh drift was started in the Home Ticket on a large mass of low grade, with bunches of good ore, and the prospects are described as favourable. The Lord Byron Tunnel has been advanced 12½ ft., and the shaft with which the tunnel will be connected and this part of the mine, is regarded as the best. The weekly telegram advises large shipments, but no improvement in the grade of the ore.

Victoria (Venezuela) Gold, ½ to ⅝; a meeting was held in Glasgow, on Tuesday, but as our local reporter has sent no account of it we presume it was not public. The company purpose to supply a report for next week's Journal. Considering the adverse rumours that have been current, it is regrettable that the meeting was not held and reported in the usual way, as the full confidence of shareholders might thus have been secured.

DIRECT CHEMICAL TREATMENT OF MIXED AND LOW-CLASS ORES.—This question is daily becoming of more and more importance to the miner. The latest step taken in this direction is the formation of the Cornwall Mixed Ore and Chemical Company, of which Mr. J. H. Collins, F.G.S., formerly well known in Cornwall, and for the last four years chief chemist and metallurgist to the Rio Tinto Company in Spain, is manager. The company is formed to acquire and treat every kind of mixed ore, together with such low-class ores, chemical residues, and waste products as may be thought desirable, so as to render the same merchantable by a combination of "wet" and "dry" processes. It is a Cost-book company (though as to the legality of this—the concern not being a mining enterprise—professional advice should be taken), in 200 shares, most of which are said to be already subscribed for in the neighbourhood, and well held. The works are now in course of erection at Pembro, near Porthleven, in Cornwall, and it is believed that the company has a speedy prosperous career before it. There is thus every prospect of the realisation in Cornwall for the first time of the ideas of the late Mr. Charles Fox, of Falmouth—a man widely known and respected for his integrity and his genius in Cornwall, and, indeed, far beyond its limits. This gentleman recommended many years since the establishment of "central chemical or metallurgical works (not in a mine partnership) for dealing with the mixed ores of various mines, and rendering advice on the advantageous treatment of them, where adventurers in individual mines would not incur the cost of experimental works," (see Mining Memoranda, by Chas. Fox, quoted by Robt. Hunt, F.R.S., in British Mining, p. 865. 1883). This is now effected, and it is thought that it could not be in better hands than those of Mr. J. H. Collins, F.G.S., who is now back in England. Mine adventurers will watch the progress of this company with no ordinary interest, as its operations cannot fail to be beneficial, not only to its own shareholders, but also to the mines of the county, which in many instances contain immense quantities of mixed ores,

which cannot be profitably treated and separated by ordinary mechanical means.

SYSTEMS OF ADVERTISING.—There is a large and increasing body of pushing commercial people whose enterprise leads them to the conclusion that "there is nothing like advertising." This saying has acquired all the unanswerable force of an axiom. Large fortunes are annually expended by individual firms on disseminating knowledge as to the wares and specialities by means of advertising *media*, and so great is the return upon the expenditure in this direction that fortunes are annually yielded upon it. Many of the most extensive advertisers have reduced their system to the exactitude of a science, and in consequence their outlay is made judiciously and advantageously. In too many cases, however, the money lavishly expended in advertising is unproductive, except to the wily spiders who spread their webs and succeed in catching the unwary flies. In the Advertisers' Guardian Mr. Louis Collins, Wine Office-court, shows how easily advertisers become the prey of what is professionally known as "the country paper trick," a system by which money is extracted from the pockets of the victims without the possibility of there being anything like an adequate return for it. The trick is an extremely simple one. A firm in London, say, arranges for the issue of a weekly periodical in different parts of the country. In each district a ready tool is found in a person who consents to lend his name and become the nominal publisher, and with this trifling exception, and the insertion of the name of the district in which the "publisher" resides, the weekly sheet is identical so far as matter is concerned in each district. A person calls upon a well-known advertiser and offers a quotation for an advertisement for a quarter in one particular district. Some negociation follows, in the course of which the "agent" represents that he is able to quote a figure for the appearance of the advertisement in 100 different papers. The advertiser is struck with the apparent reasonableness of the terms, and on the face of it the medium in this case appears to be distinctly valuable, and an order is given for the quarter's insertions at what seems to be a reduced rate for each "publication." But consider for a moment what is the value of these nominal publications. The matter being general they command no appreciable circulation in the district after which they are named, and consequently the advertisement, although issued simultaneously in a hundred different localities, receives next to no circulation. Mr. Collins gives some useful hints which, if acted upon, would enable advertisers to avoid falling into the snare.

BRITISH COMMERCE WITH ITALY.—Mr. Giglio, the British Vice-Consul at Licata, reports that during 1883 the British shipping at that place was more than twice that of the preceding year. It amounted to 42 vessels of 31,733 tons; all except one were steamers. They mostly arrived in ballast to load sulphur, and those that were not in ballast were laden with coal; 669 small Italian sailing-boats and 98 steamers of 87,609 tons had visited that roadstead. The latter, which supplied the wants of the district, were small steamers belonging to the General Steam Navigation Company, which run weekly along the southern coast of the island; 13 German vessels of 9556 tons also visited that roadstead, principally to load sulphite of strontian, used of late in sugar refineries. Sulphur is the chief article of exportation, and since Licata has been put in communication with the mining districts by the opening of the line to Favarotta, this trade has received a marked impulse. In 1882 there was an increase of 4800 tons over the year before, and 1883 showed an increase of 18,000 tons over 1882. At the close of the year 10,000 tons of sulphur were in store at Licata ready for exportation. The want of a safe harbour at some point of the southern coast of Sicily has always been felt, and the inhabitants of Licata are looking forward to the completion of the harbour works with great interest. A port is in the course of construction capable of sheltering the largest vessels, having a depth of from 8 to 10 metres. The crops in 1883 within the district of Licata were abundant, resulting in the produce of 132,000 bushels of wheat, 120,000 of barley, 36,000 of beans, and 12,000 of peas. Of industries nothing can be said to the advantage of Licata. Agriculture is carried on pretty much as it was a thousand years ago; the sulphur mines were not conspicuous for any remarkable activity, and the fisheries had not sent any of its members to the London Exhibition to derive any benefit therefrom. Licata yearns, apparently, for a direct railway line along the southern coast of the island, connecting that town with Syracuse on the one hand and Trapani on the other, but the Central Government does not seem inclined to gratify this desire.

AMERICAN TIN MINES.—The discovery of tin ore, says the Pioneer Dakota Press, marks a new and important epoch, not only in the history of the Black Hills, but in the history of metal mining in the United States; for, although small finds of steam tin have occasionally been reported in America, nothing in paying quantities, and in no instance tin ore—casseterite—has been heretofore discovered. The Black Hills have both, there can be no question of it. The doubting period has passed; the existence of a tin belt 60 miles long has been unquestionably established. They find it at Sand Creek, on the north, and at Harney's Peak on the south; at Rockford, midway between those points, and unmistakable evidences everywhere. True, no vast amount of work has been done, so secret is the discovery, but developments are sufficient to convince the most sceptical of all that I allege—like Mercutio's wound, it is enough. The most prominent metallurgists of America, such as Prof. Riotte, of New York, Prof. Bailey, of Cheyenne, Prof. Phelps, of London, Prof. Hulst, of Milwaukee, and others, have given the district the most critical examination, and have pronounced in its favour. The ore assays from 5 to 25 per cent. The famous mines of Cornwall do not average over 3 per cent. You can, therefore, draw your own conclusion as to the value of the Black Hills Tin Mines. The Etta was recently sold to a New York Company for $21,000, and is being rapidly developed.

AMERICAN INVISIBLE TRAMWAY.—A project well worthy of being classed with the mine indicator referred to in last week's *Mining Journal* is a new system of tramway owned by a New York company. It is stated that the tracks would be laid in tunnels under the pavement, and the wheels running on them connected with the car above by a steel plate ½ in. thick, which moves along through a slot in the roadway, so that the street would not be altered in the least in appearance, except that a close inspection would reveal two parallel slots ½ in. wide running through it. Now, a very small amount of engineering knowledge will suffice to enable one to understand that the slot involves a pair of plates, one on each side of it on the surface of the street, so that the danger to the ordinary traffic would be greater than at present; secondly, the ½-in. steel plate would require at least a 1-in. slot to run in, and the track would quickly become filled with mud and slush and could not be cleaned. The entire scheme is unworthy of consideration either practically or commercially.

PREHISTORIC BUILDERS.—A short time ago there was discovered in a marsh at Schussenried, in Wurtemburg, a well-preserved hut of the age of stone. The flooring and a part of the walls were intact, and, as appeared from a careful admeasurement, had formed, when complete, a rectangle 10 metres long and 7 metres wide (32 × 23 ft.) The hut was divided into two compartments, communicating with each other by a foot-bridge made of three girders. The single door, looking toward the south, was 1 metre wide, and opened into a room 6·50 metres long and 4 metres wide. In one corner lay a heap of stones, which had apparently formed the fireplace. This room was the kitchen, "the living-room," and probably a night refuge for the cattle in cold weather. The second room, which had no opening outside, measured 6·50 metres long and 5 metres wide, and was, no doubt, used as the family bed-chamber. The floors of both rooms were formed of round logs and the walls of split logs. This, be it remembered, was a hut of the stone age. It may be safely presumed that the lake dwellings of the bronze age were larger in size and less primitive in their arrangements. At both periods the platform supporting the houses communicated with the shore by means of a bridge (probably removable at pleasure), and with the water by ladders. These ladders, as appears from an example found at Chavannes, were made of a single stang with holes for the staves, which protruded on either side.

NEDENÆS COPPER MINES.—A circular has been issued by the directors, in which they give a report, dated August 20, from the agents. At Skytmur they are driving the cross-cut at the 50 to the north lode which was opened on at surface and valued at 4 tons of ore per fathom. They are now within a very few fathoms of cutting it at 50 fms. deep. In the 60 there are two stopes being worked, each being worth 4 tons per fathom, and in the 75 there are eight men stoping in the richest section of ore ground yet discovered in the mine. At Sletne men are also employed stoping ore, and in about a month they will resume sinking this shaft. From Boilstad any quantity of ore can be broken to be mixed with the more silicious ores from the other mines. One of the smelting-furnaces is completed, and another will soon be ready. A large shareholder who has recently visited the mines gives a most favourable account of them and of the plant and machinery. He expresses his conviction that the company must pay large dividends as soon as the mines and furnaces are in full operation.

OSCAR GOLD MINE.—A telegram, dated Aug. 25, has been received, advising arrival of the reduction officer, and stating that everything is progressing well.

BRATSBERG.—The Mary Owen has arrived, and is now at Burry Port, where the 200 tons of copper ore are being discharged and sampled. This ore has been sold at 10s. 3d. per unit. The John Evans has sailed from Skien, with another similar cargo. It is understood that the quantity of ore returned for the current year will considerably exceed the last.

KNOWLEDGE AMONG THE EARLY CHINESE.—In a paper upon this subject Dr. Edkins, in the Chinese Recorder, states that about B.C. 2200 the Chinese possessed a knowledge of the art of writing, a year of 366 days with an intercalary month, the astrolabe, the zodiac, the cycle of 60, of 12 musical reeds forming a gamut, which also constituted the basis of a denary metrology for measures of length, weight, and capacity, divination and a feudal system. In B.C. 1130 they were acquainted with the clepsydra and with the gamut of five musical notes. "Human knowledge was systematised in a scheme of numerical categories in which the five elements played a special part." About B.C. 550 the silk trade sprang into existence, the stars were classified, and foreign names of unknown origin were introduced for the purpose of applying the cycle of 62 years. About B.C. 140, Chinese travellers visited Afghanistan, India, Bactria, &c. The cycle of Calippus was introduced into Chinese astronomy, and geographical knowledge concerning Western nations was acquired. In the first two centuries of our era trade became more extended by sea; paper making and the manufacture of ink were introduced from Europe, the Babylonian cosmogony became the main element of the Taoist cosmogony, and the gamut of five was increased to seven notes.

GAS SHARES.—The principal business in these shares, according to this evening's report of Messrs. W. L. WEBB and Co., of the Stock Exchange and Finch-lane, has been:—British Gas Light Company (Limited), 42¾; Bombay (Limited) New, 4¼ to 5; Brentford 4 per cent. Debenture Stock, 104 to 105; Buenos Ayres, New (Limited), 12¾ to 13; Continental Union (Limited) Original, 35; ditto New, 1869 and 1872, 24½; ditto 7 per cent. Preference, 29⅞ to 30; Gas Light and Coke, A, Ordinary, 220 to 221½; Imperial Continental, 201¼ to 203¼; Monte Video (Limited), 17¼ to 17¾; Oriental (Limited), 8¾; Para (Limited), 5; Rio de Janeiro (Limited), 23½ to 25; South Metropolitan, A, 276; ditto, B, 221 to 223; ditto, Perpetual 5 per cent. Debenture Stock, 127. London Companies no change. Monte Video maintain the recent rise. Rio lower.

INSURANCE SHARES have, according to this evening's report of Messrs. W. L. WEBB and Co., of the Stock Exchange and Finch-lane, been dealt in as follows:—Alliance British and Foreign, 37 to 37⅜; Atlas, 14; City of London Fire (Limited), 9/16 to 11/16; Commercial Union, 17¾; Globe Marine (Limited), 1¾; Guardian Fire and Life, 59; Imperial Fire, 150; Indemity Marine, 14½ to 14⅝; Liverpool and London and Globe (1l. Annuity), 24 to 24½; Royal Insurance, 28¼; London and Provincial Marine (Limited), 4¼. Insurance nothing doing. Alliance Fire and Life a little firmer.

TRAMWAYS.—The closing prices of this evening, as quoted by Mr. WM. ABBOTT, of Tokenhouse-yard, are given in tabular form in the last page of the Journal.

RAILWAY AND GENERAL MARKETS.—Referring to the course of business done to-day during official hours (11 to 3) Mr. Ferdinand R. Kirk Birchin-lane, writes:—*Opening:* Last night, misled by the New York prices, buyers of American shares were rather sold, and are now endeavouring to realise on a flat market. Erie and Central Pacific are both 1 lower, prices being 16 to 16⅛ and 41¼ to 41⅜. Lake Shore have fallen 1⅛, being only 83¼ to 83½; Readings, 13¾ to 14. Trunk Seconds and Thirds are ⅛ down. Trunk Ordinary, 10¾ to 11; Firsts 85 to 85¼; Seconds, 59¼ to 59⅜; Thirds, 26¾ to 26⅝. Apart from a flatness in copper shares, mining shares continue fairly firm. Wheal Crebor, 1⅛ to 1⅛; Bratsberg, 1⅜ to 1½; Rio Tinto, 16⅛ to 16¾; Mason and Barry, 10⅛ to 10⅜; New Quebrada, 3 to 3¼; Panulcillo, 3⅛ to 3¼; Oscar Gold (10s. paid), ⅛ to ¼; Colomtian Hydraulic, 7s. to 9s.; Callao Bis, 7s. to 8s.; Antioquia, 3s. to 5s.; Cartago, 9s. to 11s.; East Wheal Rose, 7s. to 9s.; Old Shepherds, 8s. to 10s.; Home Mines Trust, ¼ to ⅞; Orita, 21s. to 23s.; Organos, 13s. to 15s.; South Darren, 2s. to 4s.—*Closing:* Trunks and American are hardly changed, and have not been much dealt in to-day. Unified opened at 60, but Paris selling has put the price down to 59¼. North Eastern, Midland, and Great Western are all from ⅛ to ¼ down. Mysore Gold, 6s. 6d. to 8s. 6d.; Potosi, 6s. to 8s.; Frontino, ⅝ to 1.

COPPER ORES.

Sampled Aug. 6, and sold at the Royal Hotel, Truro, Aug. 21.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Devon Great Consols.	115	£1 3 0	South Caradon	49	£3 18 6
ditto	105	1 3 0	ditto	31	6 3 6
ditto	101	1 0 0	Bedford United	78	3 15 6
ditto	99	0 19 0	ditto	63	3 4 6
ditto	80	1 0 0	ditto	42	1 15 0
ditto	79	1 0 0	Holmbush	88	0 9 6
ditto	78	1 1 6	ditto	57	0 16 6
ditto	62	4 19 0	ditto	3	4 9 0
ditto	48	4 17 6	ditto	2	9 12 0
ditto	33	4 5 6	Gunnislake (Clitters).	64	3 18 6
Wheal Crebor	97	2 9 0	ditto	56	3 18 6
ditto	95	2 13 0	Gawton	73	0 6 0
ditto	90	2 7 6	ditto	9	0 19 0
ditto	83	2 15 6	Prince of Wales	54	2 6 0
ditto	74	2 13 0	ditto	16	2 2 0
ditto	35	2 14 6	ditto	2	24 1 0
South Caradon	63	2 19 6	Glasgow Caradon	50	2 18 0
ditto	62	4 1 0	Collacombe	38	1 12 6
ditto	53	3 14 6	Phœnix	21	3 18 6
ditto	52	4 2 6	ditto	7	14 10 6
ditto	50	0 16 6			

TOTAL PRODUCE.

Devon Great Con.	800	£1372 17 6	Gawton	82	£ 30 9 0
Wheal Crebor	474	1214 19 0	Prince of Wales	74	210 2 0
South Caradon	360	1274 13 6	Glasgow Caradon	50	145 0 0
Bedford United	183	571 2 6	Collacombe	38	61 15 0
Holmbush	150	121 7 6	Phœnix	28	184 2 0
Gunnislake (Clit.)	120	471 0 0			

Average standard..... £ 83 12 0 | Average produce 5½
Average price per ton £2 8 0
Quantity of ore..... 2359 | Quantity of fine copper, 137 tons 1 cwt.
Amount of money ..... £ 5657 8 0
LAST SALE.—Average standard, £ 80 1 0 | Average produce 7⅛
Standard of corresponding sale last month, £ 90 0 0 | Produce, 5½

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Vivian and Sons	547	1479 19 9
P. Grenfell and Sons	517½	1485 19 3
Nevill, Druce, and Co.	477	546 16 6
Williams, Foster, and Co.	528	1325 6 3
Elliott's Metal Company	289½	819 6 3
Total	2359	£ 5657 8 0

Copper Ores for sale at Tabb's Hotel, Redruth, on Thursday next.—Mines and parcels.—Mellanear 632—New Cook's Kitchen 128—South Tolcarne 97—West Seton 47—Wheal Coates 42—Camborne Vean 39.—Total, 985 tons.

BLENDE.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Aug. 26	Frongoch	50	£ 2 9 0	Vivian and Sons.
—	ditto	50	2 8 0	Dillwyn and Co.

BLACK TIN.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Aug. 27	Phœnix United	22	£46 15 0	—

INTERNATIONAL INVENTIONS EXHIBITION,

LONDON, 1885.

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PRESIDENT.

H.R.H. The PRINCE OF WALES, K.G.

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25 Bedford United, 27s.	50 South Caradon, 16s 6d	50 Frontino, 17s. 6d.
10 Carn Camborne, 12s 6d	10 South Condurrow, £9.	20 Gold Coast, 3s.
5 Cook's Kitchen, £9½.	50 South Darren, 4s. 9d.	30 Hoover Hill, 4s. 9d.
100 Collacombe Cons, 6s6d	13 S. Devon United, 4s.	100 Indian Consol., 2s.
10 Devon Consols, £3.	10 South Frances, £7½.	100 Indian Glenrock, 2s9d
1:0 D. Friendship, 2s. 3d.	50 Tresavean, 5s. 6d.	100 Javali, 2s. 6d.
20 Devon United, 6s. 6d.	20 Trevaunance, 35s.	50 Kohinoor B, 2s. 6d.
100 Drakewalls, 2s. 6d.	62 West Caradon, 1s.	100 Kapanga, 3s. 3d.
5 Dolcoath, £73.	50 West Crebor, 2s.	50 La Plata, 5s. 3d.
60 East Blue Hills, 5s.	80 West Gonamena, 6d.	100 Last Chance, 1s.
25 Ecton, 20s.	10 West Kitty, £10½.	20 Lisbon-Berlyn, 11s.
50 East Caradon, 3s. 6d.	25 West Poldice, 6s. 6d.	50 Montana, 40s.
50 East Wheal Rose, 8s.	20 Wheal Basset, £3½.	20 New Emma, 12s. 6d.
20 Frongoch, 8s. 9d.	40 Wheal Coates, 2s. 9d.	100 Nouveau Monde, 2s.
100 Goginan, 2s.	10 Wheal Crebor, 28s. 9d	25 Oscar Gold, 10s. paid, 15s.
10 Great Laxey, £9½.	95 Wheal Jane, 2s. 6d.	
10 Gunnislake (Clit.) 10s6	80 Wheal Silver & Lanteglos, 6s.	30 Oscar Gold, Vendors' Shares, 15s.
10 Great Holway, 20s.		50 Organos, 13s.
50 Home Mines Trust, 17s. 6d.	100 Antioquia, 4s. 3d.	50 Orita, 23s. 6d.
20 Killifreth, 7s.	50 Asia Minor, 3s. 6d.	50 Potosi, New, 8s. 6d.
30 Kit Hill Gt. Cons., 2s.	30 Akankoo (f.p.), 9s. 6d.	15 Port Phillip, 2s. 6d.
10 Kitty St. Agnes, 11s6d	50 Birdseye Creek, 10s6d	10 Panulcillo, £3⅞.
45 Mounts Bay, 3s. 6d.	40 Bratsberg, 29s.	50 Ruby & Dunderberg, 19s.
10 New Kitty, 30s.	50 Cartago, 10s. paid, 9s.	
50 New Caradon, 1s. 9d.	150 Cankim Bamoo, 2s. 3d	20 Richmond, £3 11s. 3d.
100 Old Gunnislake, 5s.3d	10 Copiapo, £2½.	100 Tacquah, 2s.
50 Old Shepherds, 10s.	100 California Gold, 13s.	35 Tocopilla, 3s.
20 Phœnix United, 37s6d	50 Callao Bis, 7s. 9d	16 Tolima A, £7½.
20 Polberro, 36s. 6d.	100 Chile, 3s. 6d.	25 Transvaal Gold, 21s3d
20 Prince of Wales, 4s.	50 Chontales, 4s. 3d.	20 United Mexican, £3¼
100 Parys Copper, 1s. 6d.	100 Colombian Hyd., 8s 9	100 Victoria Gold, 6s. 6d.
10 Roman Gravels, 67s6d	80 C.Sth. Austr. Cop, 2s.	100 West Callao, 3s. 3d.
	100 Denver Gold, 2s. 3d.	

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MESSRS. WATSON BROTHERS, in referring to their public Circular in the *Mining Journal*, would also observe that they BUY and SELL SHARES at the *nett* market prices of the day in all well-established and respectable Mining Companies; also in English and Foreign Funds' Railway Stocks, &c.

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Notices to Correspondents.

GREEN MOUNTAIN MINE.—Can some correspondent give me the names and addresses of the owners of the Green Mountain Mining property, situated near Silverton, Colorado.—J. T. R.

ROCK DRILLS—"H. K. C." (City).—There are many good drills in the market—the Climax, the Schram, the Eclipse, the Champion, and two or three others being well worthy of recommendation. Both the machines you mention have been used for large work—railway tunnelling and long mining tunnelling—but in those cases expense of working is of secondary consideration compared with time. A large number of machines were kept ready to replace those disabled, and the repairs and renewals were constant. Ferroux's drill worked well on tunnelling, but was rather complicated; the Dubois-François the same. We never saw the Turretini drill at work. The Burleigh, Mackean, and other early drills were soon found to require important modifications to adapt them to industrial mining. It would be unwise to select at random or the strength of testimonials alone; the preferable course will be to direct your engineer to examine the several drills, and then take his advice. A man always makes that machine work best in which he has most faith himself.

LEAD ORE.—For some time I have been in want of carbonate lead ore, which, if of satisfactory test and purity, I should require a regular supply of reasonable quantity, and could pay a little higher price than generally paid for ordinary ores. I should require it free from the carbonates and oxides (but not necessarily the sulphates and sulphides) of other materials. I have made very many enquiries to find such, but at all mines I write to (in England) on information that they contain it, I am informed "either the mine is not working, or it will not pay them to pick it out from other ores." Now, in Germany it is largely mined and used for the purpose I require it; it was also at one time found largely in some of the Cumberland mines. Muspratt's Chemistry states it is found at Wanlockhead and Leadhills (in Scotland), and at Teesdale, Alston Moor, Keswick, and in Cornwall, particularly at St. Minver's. Can any of your readers offer me a supply, or can you direct me where to apply to?—B. H. J.: *Accrington, Aug. 27.*

Received,—"R. S." (Truro): You were quite correct as to Wheal Singer report; it is an advertisement, and chargeable as such. The letter "A Singular Mistake" is omitted. When will you learn to be less venomous?—"W. H. R."—"C. D.": Answered by post—"M. O. S."—"W. L."—"T. W."—"R. R." (Min-y-Don): We have had no reply to our last—"Subs." (Ashburton): The letter was not too late last week, but was thrown aside because you gave no name. Even your enquiry contains no name—"A." (Ovoca): Will reply by post—"T. S.": Ditto—"W. N.": Inserted—"J. B."—"T. H. S. W. (Nottingham): Not at present.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, AUGUST 30, 1884.

AUTUMN AND WINTER TRADE PROSPECTS.

Entering as we are upon the autumnal quarter it is a matter of considerable importance that we should endeavour, as far as possible, to ascertain what are the prospects of trade over the autumn and winter months. Prudent men of business "take stock" at least once a year, and a nation of manufacturers and merchants should occasionally endeavour to read the signs of the times, and ascertain whether there is a probability of prosperity or otherwise. No one, of course, can pretend to any degree of certainty; all that can be done is to take official returns and statistics, analyse them as accurately as possible, and draw conclusions therefrom. Board of Trade Returns, railway traffic receipts, and such other official documents, are trade barometers, whereby the commerce of the country may be fairly ganged; and, as for the most part, they can be safely relied on, they afford accurate data upon which to found an opinion.

The recently-issued Board of Trade Returns regarding the share and loan capital, the traffic in passengers and goods, and the working expenditure and net profits of the various railways of the kingdom, for the past half-year, show, upon the whole, but little change as compared with the corresponding half of the previous year. The amount of business done has been larger, but not more than proportionate to the extra capital employed in the new lines opened, nor is the profit made greater. The great trunk lines of the kingdom have not, in fact, paid as good dividends upon the earnings as in the corresponding half of the previous year. The London and North-Western, for instance, paid only 6 per cent. as against 7 per cent. last year; the North-Eastern, 6¾, as against 7¾; the Great Western, 5, as against 5¼; and the Midland, 5, as against 5½. But taking the railways as a whole, the dividends have been but a fraction less than those paid upon the corresponding half of last year. There have been some heavy losses upon the goods and mineral traffic, the London and North-Western having lost over 80,000*l.* gross revenue, without saving a shilling on working expenses, and the Great Western and Midland also lost large sums upon their mineral and goods traffic, yet upon the whole mineral traffic of the country the receipts increased from 15,606,000*l.* in the corresponding half of 1883 to 16,255,000*l.* during the past half-year, the increase thus being 649,000*l.*, or rather more than 4 per cent. The total quantity of minerals carried during the past half-year was 189,500,000 tons, as against 181,500,000 tons for the first half of 1883. There has been an increase of capital of about 17,000,000*l.* as compared with the corresponding half of last year; but the figures we have quoted prove beyond the shadow of doubt that, as a whole, the coal trade of the kingdom has not been in the deplorably depressed condition some persons would have us believe; and we may take for granted also that with the considerable increased coal trade, our metal works and our staple manufactures have also participated in a sound steady trade.

So much for the past. What as to the future? A Parliamentary return has just been issued as to the number and extent of the private bill legislation of the past session. The figures are not of so startling a character as we have seen on previous occasions; in fact, they are of most moderate dimensions, betokening a decrease in that speculative mania which is so prejudicial to sound and healthy trade. The total number of what are termed "private bills" was 294, of which 160 were for fresh railways, harbours, and docks, and of which 96 received the Royal assent; tramway bills 27, 16 of which passed, the remainder being of a miscellaneous character. Of the total number presented 91 were either withdrawn by the promoters or failed to satisfy the requirements of the examiners. The 117 bills for the construction of new railways or additional works comprised a total mileage of 1067 miles and a capital of 60,963,195*l.* The only canal scheme of any magnitude which failed to pass in the past session is that important one—the Manchester Ship Canal. The expenses of that legal tournament before the Parliamentary Committee must have been something fabulous. At a recent meeting of the Liverpool City Council, Sir WILLIAM B. FORWOOD said that the expenses of the Liverpool Corporation alone in opposing that scheme had been 8000*l.*; but the costs to the other opponents must have been far in excess of that amount. But although defeated in the past session, the promoters are not disheartened. Nothing but a most substantial reduction in the railway charges for the carriage of goods between Liverpool and Manchester will satisfy the demands of manufacturers and merchants; and Sir WILLIAM FORWOOD stated at the same meeting that the railway companies could afford to reduce their charges 30 per cent. without taking a penny from the pockets of the shareholders. Competent authorities estimate that an average of 200,000,000*l.* sterling of fresh capital is being yearly stored up; and gauged by this, it cannot be said that the outlets for such capital, as disclosed by the private bill legislation of the past session, are by any means great. On the other hand, there is an absence of many of those rash and chimerical schemes which a few years ago characterised our private bill legislation and which swallowed up such vast amounts of capital which could have been far more profitably employed. Regarded as a whole, the private bills of the past session do not promise any great activity in opening up fresh commercial undertakings or expansion of trade in our own kingdom, but rather a steady average trade, the commencement of which many of those competent to judge already discern.

But whilst taking this hopeful rather than gloomy view of the prospects of trade over the autumn and winter months, there are clouds upon the commercial horizon which, should they break, may exercise a depressing influence upon trade. Several of the foreign nations which have been our best customers, and others where British enterprise was opening up large fields for our goods, are in anything but a pacific condition, and commerce may, for a time, find an effectual barrier by the scourge of war. The rupture which has just occurred between France and China must have a most prejudicial effect upon the trade of this country. War, wherever waged, means a serious hindrance of trade throughout the nations upon whom it falls; and that such a vast continent as China should now be on the eve of a sanguinary conflict (which once begun nobody knows where it will end) must considerably blight all business prospects throughout the civilised world. For instance, Lancashire exports something like 6,000,000*l.* worth of cotton goods annually to China, and if war continues the great bulk of this will inevitably cease. But even here, again, we must not take a too gloomy view. We would not do evil that good might come, but it would not be difficult to cite instances in which even war has ultimately opened up rich fields for commerce which otherwise would not have taken place. China with its hundreds of millions of inhabitants is just beginning to open up under the benign influence of English and Continental civilisation. Railways are being silently and steadily pushed through that vast continent, and the whole Chinese Empire is ripe for the conquest of English capital and commerce. War, now begun, will be serious in its immediate effects upon trade and commerce, but eventually good will undoubtedly issue therefrom. A contemporary very significantly asks "If the opening of a few ports on the Yangtse river and along the coast of China from Mur-Chwang to Pak-hoi, most of them places of little importance for trading purposes with the interior has caused the foreign trade of the Chinese Empire to expand to about 60,000,000*l.* a year, to what extent will it not grow when the whole of that Empire is opened up by railways and telegraphs, and the people awakened to a new existence by intimate contact with the scientific civilisation of the West?" And this war with France, depressing as its immediate effect upon commerce will be, will unquestionably open up fresh channels of commerce for English capital and enterprise, and eventually extend the blessings of civilisation. Then, again, Africa is rapidly developing; and if the great central railway, as proposed by that intrepid traveller STANLEY, from the head of navigation on the Congo to a point about 147 miles up where the river again becomes navigable, is carried out, other rich markets will have been secured for English products, and commerce receive another impetus. If, then, the private bill enterprise of the past session does not promise any great increase of our home trade, there is every appearance that new outlets will shortly be opened up in foreign countries for our leading manufactures, whilst our own colonies also are likely to become important customers, and thus there are good prospects for steady and, we think, increasing trade over the coming autumn and winter months.

THE LEAD MINES IN THE WEST RIDING.

The depression which has long prevailed in connection with the lead mines in the West Riding of Yorkshire, it is said, is now likely to give way to a better state of things; for it is understood that some of the mines that were abandoned a year or two ago are likely to be reopened shortly. The Duke of DEVONSHIRE, who is a most extensive lessor in the Skipton district, has long been urged to make another attempt to work the mines he has long been directly connected with, so as to find employment for some of the many miners who have had a long season of idleness from no fault of their own. The Cononley Mines, situate about four miles from Skipton, at one time were worked at a slight profit, and it is expected that his grace will give them another chance. There are two veins in the principal mine, and these have produced upwards of 15,000 tons of ore, although it is said that the main vein has not been traced. This has been principally owing to the cross-veins and the weakness of the others. The main vein is part of an extensive fault, the exact extent of which has not been accurately ascertained owing to the peculiar nature of the strata. From the explorations made some hopes are entertained that the western part of the mine might be worked to advantage. The main vein above the upper adit, when traced, was found to widen out for some distance towards the north-west, and the lead on that course was worked open to the surface. The matrix of the vein, principally sulphate of barytes, allows the water to percolate through the vein. The ore yielded by the principal vein was galena, going throughout the entire width of the lode. It has been proved that in the limestones of the district there are veins running north and south across an axis leading to some quarries, and at a place known as Carlton Park Head, and near to the latter, some bunches of ore have been obtained. The veins are certainly extremely uncertain, but some of them carry deposits of lead, and there are engineers who think that the western ground connected with the Cononley Mines might possibly prove productive, especially in the settled beds which are known to exist. There is, consequently, some prospect that for lead mining the Skipton district will again take the rank it formerly did, and no person can facilitate that object more than the Duke of DEVONSHIRE, whose example in the opening out of his own mines would no doubt be followed by others.

THE PRODUCTIVENESS OF OUR MINERAL DISTRICTS.

In analysing the returns of the quantities of minerals raised under the Coal Mines Inspection Act there are some important changes to be noted all tending in one direction, or nearly so—that is, the closing of small mines and increasing the output of the others. In 1874 the number of coal mines worked was 4112, which produced 126,590,108 tons of coal, giving 30,788 tons to each mine, whilst leaving out the Cleveland ironstone field; in 1883 there were 3490 mines producing 163,737,327 tons of coal, giving 46,910 tons to each mine. Nottinghamshire, which is a portion, but only a small one, of the Great Midland coal field, now takes the lead, and there is every likelihood that it will continue to do so, seeing that the extensive measures have not been much broken into, there having been some doubt until a comparatively recent date whether the coal would be found under the magnesian limestone. This problem was satisfactorily solved on the estate of the Duke of Newcastle at Shireoaks, when the well-known Barnsley bed was reached at a depth of 510 yards from the surface. South Durham stands next, but the rate of production has gone on increasing to such an extent that there is every probability that it will be one of the first of our extensive coal fields that will be pumped out, and according to Mr. I. Lowthian Bell it will be finished long before the Cleveland ironstone, which it now smelts, will be exhausted. The fuel for the furnaces will then have to be obtained from the West Riding mines, which will survive all other districts with the exception, perhaps, of South Wales. Here again we find a marked diminution in the number of collieries at work at the present time, as compared with a few years ago. With the low price of coal which has ruled experience has shown that the Thin seams cannot be worked at a profit, whilst even the Thick ones, from 7 ft. to 10 ft., are now barely made to pay.

The coal field of South Wales, the largest in the kingdom with the exception of the Clyde basin, having the greatest vertical thickness of strata of any coal field in the world, has also made marked progress during the last few years in the development of its coal wealth, and so also has West Lancashire. The changes that have taken place in the course of the last ten years will be seen from the following figures, showing the number of mines in the various districts, and the average production of each in the years 1874 and 1883:—

	1874. No. of mines.	Ave. tons.	1883. No. of mines.	Ave. tons.
Durham, North, &c.	209	65,513	208	83,800
Durham, South	178	100,632	214	105,199
Yorkshire	516	28,737	434	46,126
West Lancashire	182	40,895	154	68,530
North Wales	122	19,880	82	31,736
Derbyshire	243	29,430		
Warwickshire	29	29,362	327	34,962
Leicestershire	24	45,852		
Nottinghamshire	45	69,283	42	126,568
Staffordshire, South	469	17,888	397	26,810
Staffordshire, North	156	27,661		
Cheshire	36	17,094	242	34,989
Shropshire	65	18,276		
Lancashire, North and East	372	21,535	290	34,646
Monmouthshire	119	42,345		
Gloucestershire	127	13,834	291	32,521
South Wales	371	27,452	360	50,010
Scotland, West	235	28,112	261	32,176
Scotland, East	366	27,831	327	50,987
Ireland	42	3,315	24	5,400

SCOTCH PIG-IRON WARRANT MARKET.

Mr. W. WILSON (Glasgow, Aug. 28) writes:—The warrant market has been slightly weaker because of the Franco-Chinese difficulty; but the movements in the price are trifling. The improved demand for certain special brands continues, and it is satisfactory to see the production of all the brands so fully absorbed. Although there is yet little enquiry for iron as an investment, it is felt that the shrinkage which this trade has shown for a couple of years has ceased for the time being, and a trifling improvement is even apparent in some departments. Shipments for the week are again small as compared with those of last year. One furnace has been relighted at Garsherrie, making the number blowing 95: 655 tons were taken out of store here last week, while 84 tons were taken out at Middlesborough. Business was done during the past week at the following prompt cash prices:—

Thursday, Aug. 21.	Friday, Aug. 22.	Monday, Aug. 25.
41/6½, 41/7, 41/5½ ...	41/5½ ...	41/5½, 41/4½
Tuesday, Aug. 26.	Wednesday, Aug. 27.	Thursday, Aug. 28.
41/5, 41/5½, 41/5, 41/5½ ...	41/5, 41/3 ...	41/3½, 41/4, 41/3½, 41/4

	1884.	1883.	1882.	1881.
Price of Scotch Warrants, Aug. 25...	41/5 ...	46/11 ...	50/4½ ...	49/10
Furnaces in blast in Scotland do. ...	95 ...	115 ...	109 ...	119
Iron in store at this date ...	585,962 ...	584,895 ...	630,113 ...	578,321
Shipments of Scotch pig-iron for week ending Aug. 23 ...	9,320 ...	17,009 ...	13,151 ...	11,239
Do. since beginning of year...	365,224 ...	427,150 ...	419,586 ...	369,529
Price of Middlesbro', No. 3, Aug. 25	36/4½ ...	39/ ...	44/3 ...	36/6
Furnaces in blast Middlesbro' dist.	99 ...	113 ...	120 ...	117
Middlesbro' Iron Imported at Grangemouth, week ending Aug. 23 ...	5,926 ...	5,941 ...	3,760 ...	5,107
Do. do. since beginning of year ...	168,495 ...	173,575 ...	146,856 ...	136,587

BASIC STEEL PROCESS IN STAFFORDSHIRE.

The usual annual excursion of the South Staffordshire Institute of Iron and Steel Works Managers was made on Aug. 22, when Mr. William Hudson, President, assisted by Mr. R. Smith-Casson, vice-President, and Mr. W. Yeomans, secretary, conducted a large number of members and their friends upon a visit to the new works of the Staffordshire Steel and Ingot Iron Company, at Spring Vale, Bilston. The party arrived there just as a blow was beginning with one of the three Bessemer-Basic converters. This, which had received some 18 cwts. of lime, had been charged with about 6 tons of molten metal from the cupola in which the pig-iron had been melted. The blast having been turned on, a blow of some 20 minutes took place, until it was shown that the bulk of the impurities had been eliminated. The after-blow was then begun, and kept up for several minutes. Samples of metal were taken out at intervals. When these had been tested, and from 70 lbs. to 80 lbs. of ferro-manganese had been introduced, the converter was tapped into a ladle worked on a hydraulic crane, and was run out into ingot moulds. The members then adjourned to the cogging and plate mills, where they watched the rolling down of plates from ingots. In the blacksmiths' shops samples cut from cold plates were tested with varying results. The blast-furnace plant of Messrs. Alfred Hickman and Sons, whence the pig-iron which had supplied the cupola at the steelworks had been exclusively obtained, was then inspected, and the method by which the works are lighted at night by electricity was fully explained.

At the dinner which subsequently took place at Wolverhampton, the Vice-president in proposing the toast of the Local Industries, said it must be a source of great satisfaction to them all that the process of steel-making which Messrs. Thomas and Gilchrist had discovered had removed the difficulty which previously stood in the way of the development of the iron and steel industries of South Staffordshire. The time, he was sure, would come when statues would be erected in Wolverhampton, Birmingham, and other towns in this part of the kingdom, in honour of these men who had fought so valiant a battle in the interests of the chief pig-making centres. To their names must be added those of Mr. Alfred Hickman and his sons, for if it had not been for the energy and far-sightedness of those gentlemen it might have been 20 years or more before the development of the steel industry would have taken place in this district. It must have been a source of astonishment to a good many that day to see a plate rolled, he might almost say, right off from the blast furnace. In acknowledging the toast Mr. Gilchrist said that he hoped to learn from the members of the Institute where, if at all, the material was defective, and he would then do his very best to put it right. What they were trying to produce at the Bilston Works was a material similar in its nature to that which the mill and forge-managers of South Staffordshire had always been used to. They were prepared to deliver into this district plates and other iron or steel at Middlesborough prices, and, he thought, of superior quality. He wished them honestly, however, to examine the thing for themselves, and then if they found it as good as Middlesborough iron to give the native works the preference.

SERIOUS CHARGE AGAINST A WORKS AGENT.—At the Swansea Petty Sessions on Tuesday, Mr. Edward Player, of Eaton-terrace, Swansea, was brought up under a warrant, charged that he being a clerk or agent in the employ of Sir Henry Hussey Vivian, Bart., M.P., did commit fraud by falsifying entries in the books of the said firm. Mr. Abel Thomas, barrister, appeared for the prosecution, and Mr. Evans, solicitor, of Neath, for the accused. The case was not gone

the solicitor for the defendant having been only instructed that ning, and having, therefore, no time for preparing the defence. an application that the accused should be admitted to bail, Thomas, on the part of the prosecution, strongly opposed it, ing that they had already traced defalcations extending over five rs to the extent of 1500*l.*, and that in connection with only one Sir Hussey Vivian's many works. Probably in addition to the sent charge of fraud, the prosecution would be compelled to add of larceny and embezzlement, and under such circumstances he ngly opposed the application for bail. The magistrates there- n declined to grant bail, and the accused was remanded in ody for a week. Player has for many years past occupied a high responsible position of trust in connection with the many metal other works of Sir Hussey Vivian. He has consequently enjoyed respect and esteem of all classes. In addition to this he is a ue ribbonite." He took the chair at many of the teetotal meet- s. He resided in one of the most aristocratic terraces of the n, his family being in a high social position. His apprehension, refore, upon such a serious charge created a great sensation.

THE IRON TRADE, AND ITS PROSPECTS.

Although dull markets characterise the iron and steel industries at s time of year, there is in almost every department of these indus- es an improving demand. A steadily growing demand must mean the long run stiffening prices. The best test of prospects in the ple industries is the state of the retail trade and the order books the works. In both respects reports are satisfactory and decisive. most without exception buyers are laying in full stocks for the tumn and winter, and manufacturers are full of orders. A better rvest than the country has been favoured with for some years seems have quickened the demand for many classes of manufactured ods at a time when stocks are almost at their lowest, and the im- vement is making itself felt gradually in the heavier branches, d will soon, it may reasonably be expected, spread to every branch manufacturing industry in the country.

At the meeting of the Patent Shaft and Axletree Company, held the Queen's Hotel, Birmingham, on Monday, two facts of special terest to the trade came out—first, that notwithstanding the heavy riff on British goods maintained by the United States, a very good ade had been done with that country, thus confirming statements ade very generally in the metal trades throughout this district; cond, that the important experiments with the open-hearth process ad been developed with the result that open-hearth steel had been ade of about double the tensile strength and extension rate of rought iron, and at about two-thirds of the price. The company working full time, and has as much business as it cares to under- ke at the present comparatively unremunerative prices, and this is e rule throughout the Midlands to a far greater extent than is enerally supposed. Prices, however, have fallen so seriously that dividend of 5 per cent. on ordinary stock on an output representing 81,515*l.* for 47,754 tons of iron and steel made into merchantable oods is as much as companies not enjoying monopolies of special nes of manufacture can expect.

Conversion of the National Debt.—Referring to the advice a solicitor that a trustee is "at liberty to act, to exercise his otion, and convert his clients Three per Cents. into a Two-and-a-Half per cent. stock, which is 'safety for him,' as he is relieved rom all liability by the recent Act," Mr. J. G. Hubbard, of t. Helen's-place (by no means a bad authority on the sub- ect), in a letter to the *Times*, says:—The same reasoning would, f course, apply to the acceptance of a still more injurious offer han the present one, of 2*l.* 14*s.* or 2*l.* 16*s.* in exchange for 3*l.*, nd it raises the very serious question as to how far a trustee s morally, if not even legally, responsible in sacrificing the income of his beneficiares. The justification of the trustee must surely con- ist either in the coercion of the law or in the proof that the conver- ion has not been a damaging one. In this instance there is no com- ulsion, and the present damage is undeniable. What the future ay bring forth no one can tell, and trustees have no right to spe- ulate upon far distant variations in the value of money and of ecurities. When, if ever, the State in exchange for 100*l.* Three per Cent. stock offers a trustee 100*l.* cash or a new investment, it will be soon enough for him to find a path of safety in the acceptance of either alternative; but for a trustee to accept the present proposals of the Treasury would imply either incompetence for his office or an ignorant and selfish regard for his own safety, which blinds him to the absurdity of supposing that a trustee can be damnified by non- compliance with offers which, as regards the measures now under consideration, are even officially admitted to be purely optional.

THE DIAMOND INDUSTRY.

The celebrity of Indian diamonds dates from remote antiquity, the mines in Golconda and Visapoor in the Orixa Mountains, between Cape Comorin and Bengal, being those which enjoyed the highest reputation, although it is probable that these were by no means the only source from which the ancients obtained their supply; yet until the beginning of the eighteenth century India and the Indian Archi- pelago may be regarded as the only regions in which they were known. It was in 1728, according to Mr. Robert Hunt, F.R.S., that the diamond mines of Brazil were first discovered in the Serro do Frio. The ground in which they are embedded has the most perfect resemblance to that in which the diamonds occur in the East Indies. It is a solid or friable conglomerate, consisting chiefly of ferruginous sand, which encloses fragments of various magni- tude of yellow and bluish quartz, of schistose jasper, and grains of gold, disseminated with oligist iron ore. The most cele- brated Brazilian diamond mine is that of Mandarga, on the River Jigitonhonha, in the Serro do Frio district north of Rio de Janeiro. The working was carried on by squads of 200 negroes with surgeon and priest, and every possible precaution was taken to prevent pilfer- ing, so that it may be assumed that the real produce was very accu- rately known. The flat mines on each side of the river are equally rich in diamonds over their whole surface, so that it becomes very easy to estimate what a piece of ground not yet washed may pro- duce. It is said in Brazil the diamonds surrounded by a greenish crust are of the first water, and the most limpid when cut. The dia- monds received in the different mines were deposited once a month in the Treasury of Tejuco, and the amount of what was thus delivered at the beginning of the present century was certainly under 20,000 carats per annum, and this has never been exceeded.

From these few notes it will be more easy to estimate the vast character of the diamond discovery in South Africa some 10 or 12 years since, and to comprehend the revolution which that discovery has caused in the diamond trade of the world—the output of diamonds may be regarded as equal to twenty times that of Brazil in its most prosperous diamond producing days, and the price, especially for small diamonds, has consequently fallen to 1-20th of that which ruled before the South African discovery. The increased attention which has within the last few weeks been directed to diamonds, in con- sequence of the finding of the Allenberg stone of 457 carats, will give more than usual interest to the subjoined tabular return of the production of diamonds of the four mines of Griqualand West—Kimberley, De Beer's, Dutoitspan, and Bultfontein—prepared by the Kimberley Board for Protection of Mining Interests. It will be seen that during the 18 months ended Feb. 29 the Kimberley Mine produced 1,429,726½ carats, worth 1,399,404*l.*, or 19*s.* 11½*d.* per carat, the aver- age monthly yield of the mine being 79,429 carats, worth 77,745*l.* During the same period the De Beer's Mine produced 656,427 carats, worth 700,944*l.*, or 21*s.* 4½*d.* per carat, the average monthly yield of the mine being 36,468 carats, worth 38,941*l.* The Dutoitspan Mine produced 709,877½ carats, worth 1,016,404*l.*, or 28*s.* 7½*d.* per carat, the average monthly yield of the mine being 39,438 carats, worth 56,467*l.* The Bulfontein Mine produced 738,230½ carats, worth 791,025*l.*, or 21*s.* 5*d.* per carat, the average monthly yield being 41,013 carats, worth 43,946*l.* This gives a total for the 18 months and for the four mines of 3,534,261½ carats, worth 3,907,775*l.*, or 22*s.* 1½*d.* per carat, the average monthly yield being 196,348 carats, worth 217,099*l.* Extending the return three months longer the average value is found to be 22*s.* 4*d.* per carat for the 21 months, and the annual output exceeds 2,300,000 carats.

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Mine.	September, 1882. Pro. car.	Value.	Av. per car.	October, 1882. Pro. car.	Value.	Av. per car.	November, 1882. Pro. car.	Value.	Av. per car.	December, 1882. Pro. car.	Value.	Av. per car.	Totals during the nine months	Value.	Av. p.c.	Pro. car.	Aver. per month.
Kimberley ...	90,637¾	£127,840	28/2½	106,589¾	£145,640	27/4	82,83[illegible]	£93,010	21/3	109,919	£94,930	18/3¾	912,378¾	£329,250	20/4½	101,375	103,250
De Beer's	36,818¾	47,611	25/10¾	34,576¾	38,420	22/2½	29,661½	31,330	21/1½	39,447¾	39,860	20/2½	321,071½	320,240	19/11¾	35,675	35,586
Dutoitspan ...	49,034¾	99,950	40/4	44,787¾	76,330	34/1½	43,858¾	73,850	30/4¼	48,459¾	63,860	26/4¼	377,630¾	524,180	27/9	41,980	58,240
Bultfontein ...	35,832	87,110	31/10½	37,864¾	65,970	29/8¾	35,891½	43,030	23/11¾	34,589	36,420	21/1	338,820¾	338,210	22/11	41,980	43,130
Totals	212,362	£331,510	31/2¼	233,567	316,910	28/3¾	197,840	£238,220	23/11½	232,385¾	£235,070	21/0¾	2,949,901¾	2,161,880	22/2	216,660	240,200

Mine.	June, 1883. Pro. car.	Value.	Av. per car.	July, 1883. Pro. car.	Value.	Av. per car.	August, 1883. Pro. car.	Value.	Av. per car.	September, 1883. Pro. car.	Value.	Av. per car.	Totals during the nine months.	Value.	Av. per car.	Pro. car.	Aver. per month.
Kimberley ...	62,171¾	£57,508	18/6	64,015	£57,213	17/10½	53,195¾	£55,356	20/9¾	58,150¾	£47,080	16/2¾	517,347¾	£345,506	18/11	48,111¾	57,483
De Beer's	33,402¾	33,924	20/3¼	22,103½	24,797	22/5¼	30,961¾	42,652	27/6¾	34,164¾	39,850	23/1	335,355	380,704	22/10½	40,753¾	42,309
Dutoitspan	29,397¾	30,934	20/11½	32,057½	44,429	29/6¾	35,764½	54,997	30/9¾	37,875½	59,333	31/4	332,246¾	492,224	29/7½	34,277	39,517
Bultfontein ...	38,422¾	33,180	17/3¼	27,600¾	29,750	26/10	42,123¾	44,275	21/0¾	48,699½	51,494	21/3	399,409¾	402,813	20/2	43,755	46,943
Totals	163,993½	£155,546	18/11½	143,776¾	£155,189	21/7	162,044¾	£197,676	24/4¼	179,037¾	£197,772	22/1¼	1,584,353½	1,745,895	22/0¼	166,903	185,877

Average Production during the Eighteen Months from Sept. 1, 1882, to March 1, 1884, divided into Six Periods of Three Months each.

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Mine.	First period of three months from Sept. 1 to Nov. 30, 1882. Produc- tion carats.	Value in sterling.	Average per carat.	Average per month during this period.	Second period of three months from Dec. 1, 1882, to Feb. 28, 1883. Produc- tion carats.	Value in sterling.	Average per carat.	Average per month during this period.	Third period of three months from March 1 to May 31, 1883. Produc- tion carats.	Value in sterling.	Average per carat.	Average per month during this period.	Fourth period of three months from June 31 to Aug. 31, 1883. Produc- tion carats.	Value in sterling.	Average per carat.	Average per month during this period.	Fifth period of three months from Nov. 10, 1883. Produc- tion carats.	Value in sterling.	Average per carat.	Average per month during this period.	Sixth period of three months from Dec. 1, 1883, to Feb. 29, 1884. Produc- tion carats.	Value in sterling.	Average per carat.	Average per month during this period.
Kimberley ...	280,381¾	£361,491	25/9¾	93,345¾	£120,497	25/9¾	317,570¾	£290,850	18/3¼	105,857	£96,950	18/3¼	314,771¾	£276,910	17/7¼	104,924	173,702	£170,078	19/7¾	57,901	£81,094	14/0¾	164,284¾	£146,794	17/10¼	54,761
De Beer's	101,066	117,360	23/3¾	33,688¾	39,120	23/3¾	110,078¾	98,030	17/9¼	36,693	32,676	17/9¼	109,9-6¾	104,830	19/0¾	36,642	28,822	33,862	23/5¼	11,279	13,589	24/1½	34,950	41,639	23/9¼	13,879
Dutoitspan	142,489¾	249,160	34/11¼	47,496	83,060	35/5¼	140,024¾	168,290	24/0½	46,674	56,097	24/0½	95,117¾	106,710	22/5¼	31,706	35,570	43,450	24/5¼	14,475¾	17,379	24/0½	124,475¾	186,978	30/0½	41,492
Bultfontein ...	109,379¾	156,110	28/6¼	36,459¾	52,036	28/6¼	119,675¾	123,750	20/8¼	39,892	41,250	19/9	109,766¾	108,350	19/9	36,583	35,401	106,203	21/7½	35,401	42,481	24/0½	142,960¾	141,421	19/9¼	47,140
Totals	632,969	£884,110	27/11¼	201,989¾	£294,713	29/2¼	687,349¾	£680,920	19/9¼	229,116	£226,973	19/9¼	629,583	£596,320	18/11¼	209,861	469,813	£578,216	24/7½	156,804	£169,405	21/7½	563,473	£589,245	22/4	187,825

The subjoined tables continues the statistics to the end of June

The original tables are prepared by Mr. Henry Tucker, the secretary of the Board for the protection of the mining interests, and are com- piled from returns filed in the office of Mr. John Fry, Chief of the Detective Department of Griqualand West, and are certified by him as correct:—

March:—	Kimberley.	De Beer's.	Dutoitspan.	Bultfontein.	Total.
Production, carats	50,659 ...	43,031¾ ...	40,013¾ ...	47,314½ ...	181,108¾
Value..... £	46,701 ...	44,556 ...	78,034 ...	48,132 ...	215,423
Average per carat	18s.5¾d....	20s.8½d....	37s. 8d. ...	19s.6d. ...	23s.9½d.
April:—					
Production, carats	47,328½ ...	35,065¾ ...	37,150½ ...	44,959¾ ...	165,503
Value..... £	45,061 ...	46,845 ...	57,506 ...	47,207 ...	196,419
Average per carat	19s.0½d....	26s.7¼d....	30s.11½d....	21s. ...	23s.10½d.
May:—					
Production, carats	42,603 ...	39,868½ ...	35,131¾ ...	41,777¾ ...	159,385½
Value..... £	48,644 ...	50,789 ...	51,819 ...	43,344 ...	194,596
Average per carat	22s.10d. ...	25s.11¼d....	29s.6d. ...	20s.9d. ...	24s.5d.
Total for quarter:—					
Production, carats	140,595½ ...	117,966 ...	112,385½ ...	134,051 ...	504,998
Value..... £	140,406 ...	141,990 ...	187,359 ...	136,683 ...	606,438
Average per carat	19s. 11½....	24s.0¾d....	33s.4d. ...	20s.4½d. ...	24s.0¾d.
June:—					
Production, carats	38,421½ ...	33,663¾ ...	38,915 ...	39,391½ ...	150,393½
Value..... £	41,262 ...	40,507 ...	57,563 ...	41,238 ...	180,570
Average per carat	21s.5¾d....	24s. 0¾d....	29s.7d. ...	20s.11¾d....	24s.0½d.

IMPORTS.

	From England. Carats.	Amount.	From Free State. Carats.	Amount.	From Barkly West. Carats.	Amount.	Colony. Carats.	Amt.
March.	15 ...	£ 100 ...	5,821½...	£ 9,704 ...	1,417¾...	£ 4,420 ...	— ...	—
April...	13,768¾...	14,431 ...	1,775¾...	4,050 ...	1,461¾...	4,381 ...	— ...	—
May ...	2½...	5 ...	3,463¾...	7,992 ...	1,705½...	6,762 ...	— ...	—
Total..	13,785¾...	£14,536 ...	11,060½...	£21,746 ...	4,583⅞...	£15,563 ...	— ...	—
June..	1,315¾...	731 ...	3,863¾...	7,609 ...	1,802 ...	4,761 ...	18½...	£36

EXPORTS.

March	201,481¼ carats	£246,246	Average 24s. 5¼d.
April.....	203,983¾ ,, ...	258,670	,, 25s. 4¼d.
May	122,393 ,, ...	176,963	,, 28s. 11d.
Total quarter	527,653 ,, ...	£681,879	,, 25s. 10d.
June.....	170,136½ ,, ...	218,882	,, 25s. 8¾d.

The revenue and expenditure of the Kimberley Mining Board for 1883 (prepared by Mr. Henry Tucker, accountant and treasurer, and audited by Messrs. Pistorius and Roberts) show:—Expenditure for artizans and labour, 5239*l.* 14*s.* 1*d.*; sanitary account, 1980*l.* 0*s.* 2*d.*; establishments, 4383*l.* 5*s.* 11*d.*; water and drainage, 2871*l.* 4*s.* 1*d.*; charges account, 1472*l.* 10*s.* 6*d.* (together, 15,946*l.* 14*s.* 9*d.*); interest account, including provisional charges for interest on overdue bills, &c., 29,845*l.* 15*s.* 11*d.*; expended on reef account during the year, 268,317*l.* 16*s.* 11*d.*; written off for wear and tear of machinery ac- count, 7449*l.* 18*s.* 9*d.*=321,560*l.* 6*s.* 4*d.* Revenue from rates levied (of this 35,390*l.* 8*s.* 3*d.* remained outstanding on December 31), 273,945*l.* 3*s.* 10*d.*; fines account, 4*l.*; tramway account from charges on blue ground, 2416*l.* 0*s.* 4*d* =276,365*l.* 4*s.* 2*d.*; leaving balance being excess of expenditure over revenue for the year, 45,195*l.* 2*s.* 2*d.*

The statement of liabilities and assets at the end of December, 1883, showed:—Liabilities for reef bills outstanding, 296,140*l.* 10*s.* 6*d.*; bills payable and loans, 109,581*l.* 17*s.* 9*d.*; provisional interest on bills and bonds unpaid, 26,537*l.* 2*s.* 11*d.*; sundry creditors, 3145*l.* 18*s.* 4*d.*= 435,405*l.* 9*s.* 6*d.* On the other side of the account the assets were trams, buildings, and rolling stock, 67,042*l.*; rates outstanding, 74,511*l.* 18*s.*; sundry debtors, 3214*l.* 12*s.* 2*d.*; cash in hand, 41*l.* 2*s.* 6*d.*: leaving balance being excess of expenditure over revenue to Dec. 31 last, 290,595*l.* 16*s.* 10*d.*

New Machine Tools for Railway Work.—A number of new machine tools specially designed for railway plant construction have just been made by Messrs. Craven Bros., of Manchester. These in- clude a series of machines which have been made for the Great Western Railway Works at Swindon for the manufacture of iron framework for railway carriages and wagons. The designing of these machines has necessitated a special arrangement of a set of fixed spindles. These are carried on five separate machines, having respectively 42, 19, 38, 35, and 43 spindles. The machine with 43 spindles is horizontal, and carries a drill at each end, and this is done not only to equalise the pressure, but also to enable the ma- chine to drill two pieces of ironwork of the same description at the same time. These machines are also arranged to work in con- nection with specially constructed circular saws for cutting the ironwork cold, and with rotary cutters for making the mortices. The whole of the parts of the iron frames are thus turned out ready for putting together by means of hydraulic rivetters, which are worked in connection with the machines above described, and the entire framework is manufactured and built up with little or no manual labour being required. The construction of iron framework has hitherto been chiefly confined to wagons and carriages on the Indian railways, but with plant such as the above, and with iron at a low price, their introduction into English railways would seem to be a matter of economy which may encourage the home railways to adopt iron in the place of wood. Another special machine has also been made by Messrs. Craven Brothers for the Midland Railway Works at Derby. This ma- chine has been specially designed for the cutting out of crank- webs, and in view of the recent disastrous accident near Sheffield any improvement in the manufacture of locomotive cranks is of im- portance. The machine has been made for cutting out the rough crank-webs and round the crank-pin to within ½ in. of the finished size, thus enabling the cranks to be annealed in the rough after they have been cut, and before leaving the works. The usual practice is to anneal the cranks in the solid, but by cutting out the sweeps be- fore annealing the process will not only be carried out much more effectually, but it enables the centre of the crank-webs to be inspec- ted before leaving the works. The work which the machine has to do is effected by means of a rotary cutter, 3 ft. in diameter, having steel tools of ordinary shape, but so arranged at intervals that they cut alternatively, and at each revolution the cut is deepened. The cutter is forced into the web by a self-acting motion, and when it has advanced to a depth of within ½ in. of the crank-pin a circular self-acting motion is put into gear which revolves the crank, thus making the crank-pin round.

The Shropshire Miners.—Whatever may be the shortcomings of the Relief Committee it would be unjust to charge them with reckless haste. At their meeting on Aug. 6, Mr. R. Jasper More pre- siding, it was resolved that their report should be sent to the Press for publication. We received a copy from the Chairman on Aug. 28. The committee report—1. That the sub-committees met nine times in successive weeks in their respective districts, and the general com- mittee met seven times—fortnightly—at Shrewsbury, making the expenditure of less than 100*l.*, and their exertions to find employ- ment for the men extend over more than two months.—2. The average number of families who received bread, butter, and tea weekly for eight weeks was about 112. A few men were assisted with money for railway fares, to enable them to go to work at a dis- tance. Some small sums of money advanced on loan have been re- paid. The efforts of the committee to obtain employment for the men met with varied results. In other parts of the report it is said that, granting the willingness of the farmers to employ these men, it must be stated that some of the men show a preference for stay- ing at home, and have not sought work from farmers. The com- mittee have to acknowledge the employment of some of the men at the reservoir in course of construction in North Wales for the supply of water to Liverpool, and also for a request for 20 men for Malpas in Cheshire. In several cases, however, the applications for men having arisen in consequence of a strike, obstacles were put by local workmen in the way of those who were replacing displaced work- men. The committee beg leave to observe that it is not their pro- vince to engage in discussion on the various views held as to the policy of giving relief in such cases. Their duties have been merely ministerial, and conclude with rendering the above account of the work they were requested to undertake. Whether the case may be one for a fresh appeal for funds in the winter, or not, it is the pro- vince of the public to judge. The men in the Shropshire district have, in many cases, small holdings of land and a cow or two. The Shropshire lead miners have allowed their wages to be two months in arrear, and have never availed themselves of the power given under the Limited Liability Act of inspecting the books of the com- pany, to see what money is in hand for wages. They would probably

be afraid to presume to do this. Some who ought not to have done so have applied for relief; but as the result of a diligent examination of the cases, extending over many hours at a time, all the facts relative to the applications received have been recorded in manuscript. The committee believe and trust that generally they have prevented imposition, and hope that they have taken sufficient pains to give satisfaction to the donors of the money, and have afforded sufficient materials for the public to consider whether the case is or is not one in which an appeal for further funds should be made; and if so, whether any better method can be suggested for distributing such funds. Altogether, the case would appear to be one in which the local taxpayers and the minelords are well able to bear the burden thrown upon them, whilst the men seem to be in a much better position than the vast majority of the unemployed elsewhere; the charitably disposed should, therefore, endeavour rather to relieve the distress around them than to send funds to Shropshire.

THE MASON SCIENCE COLLEGE.

The syllabuses of the day and evening classes in connection with the Faculties of Science and of Arts in the Mason College, at Birmingham, have just been issued, and although the primary object of the executive appears to be to supply such instruction as shall enable the student to obtain a degree at the University of London, or to pass the examinations for women at Oxford and Cambridge as the case may be, the courses are so arranged that a sound technical education—an education embracing only English and useful industrial science—may be obtained without the student being compelled to waste time upon subjects of mere speculative value—theology, biology, classics, and so on. To the large majority of students likely to attend the Birmingham College the ability to learnedly distinguish gregarinida, platylminthes, and lamellibranchiata is not, and probably will never be, of paramount importance to enable him to profitably carry on the business in which he will subsequently be engaged; it will not benefit him in his ordinary business to know the precise differences between the amœba, should he see one, and the rabbit, and he will be content to take his chance of being able to distinguish the latter nearly enough for all practical purposes without troubling himself with the college course. The syllabus of the Faculty of Arts will be of little interest to the industrial science student, as the English, French, and German department seem to have been framed with too much regard for the history of the literature of the respective countries, and with too little attention to practical utility. These courses, however, will be useful for enabling students to satisfy the requirements of non-utilitarian university examiners.

In the Faculty of Science the arrangements seem to have been most judiciously made in consideration of the wants of the district; and in consideration also of the fact that it is to be assumed that although an academic status is offered without demanding an acquaintance with classics and theology, yet that the intellectual training of the science graduate is fully equal to that of his confreres in the orthodox universities. In the department of Mathematics, in which the chair is filled by Prof. R. S. Heath, M.A., Fell. Trin. Coll., Cambridge, D.Sc. Lond, the student is taken as far as is necessary for the Lond. B.Sc. (Branch I.) pass examination, and in applied mathematics the student is made acquainted with the leading principles of kinetics, statics, hydrostatics, and astronomy. The department of Physics is as well cared for as that of mathematics—the instructors being Prof. J. H. Poynting, M.A., with Mr. Ernest Love, B.A., (both are of Cambridge) as demonstrators: the subject is carried as far as necessary for the Lond. B.Sc. pass examination. The next department—that of Chemistry and Metallurgy—is under the guidance of Prof. W. A. Tilden, D.Sc., F.R.S., with Mr. W. Nicol, M.A., B.Sc. Edin., as assistant lecturer, and Mr. Thomas Turner, A.R.S.M., F.C.S., as demonstrator. It is stated that twenty elementary lectures adapted to the requirements of beginners will be given in the winter term, and will be repeated after Christmas. In addition to attendance upon the lectures the class will meet once a week (at a time to be arranged at the commencement of the course) for repetition and for the working of problems and exercises. The design of the general course will be to offer to the student systematic instruction in the general principles of the science, as well as information regarding the properties of the most important elements and their compounds. Efforts will also be specially made to indicate the application of this kind of knowledge to useful purposes in the arts and manufactures The general course of lectures on chemistry will be found useful by students who are afterwards to become engineers, architects, builders, brewers, or manufacturers (such as metallurgists, alkali, soap, manure, glass, or cement makers, bleachers and dyers, &c.) In addition to attendance at lectures a course of instruction in experimental chemistry in the laboratory is essential to all who wish to obtain a practical knowledge of chemistry, the duration of such course depending upon the circumstances of each case.

There is also a laboratory course, the object of which is to supply instruction in the principles and practice of chemical analysis, qualitative and quantitative, to enable the student to conduct original investigation, or to pursue practically the study of any special branch of chemistry, with a view to its direct application to manufacturing or other purposes. By means of two courses of lectures on the principles and practice of metallurgy the processes of extracting the chief useful metals from their ores will be fully described and illustrated as far as possible by diagrams and specimens. In connection with practical metallurgy arrangements will be made in the chemical laboratory for giving instruction in the usual processes of wet or dry assaying, and in the preparation and analysis of alloys and various furnace products, also in the mechanical testing of the strength of metals; the last by arrangement with the engineering department of the college. Gas, fuel, water, and ordinary reagents are supplied by the college; but students must provide themselves with the set of apparatus, the cost of which is about 30s., also with crucibles and materials when large quantities are required. During previous sessions permission has been obtained to visit some of the great factories in and near Birmingham in which chemical and metallurgical industries are carried on. Students have thus had most valuable opportunities of gaining a practical acquaintance with some branches of applied science. The privilege thus courteously granted by several manufacturers will it is hoped be enjoyed in every future session.

There are two distinct series of lectures in the department of Geology and Mineralogy, which is under the guidance of Prof. Charles Lapworth, LL.D., F.G.S. The normal or ordinary series is designed to meet the requirements of ordinary students in geology. The extra or special series is planned to meet the desires of beginners, amateurs, and the general public. The normal or ordinary series in geology embraces those subjects in which candidates are examined for the second B.Sc. pass examination of the University of London. Civil engineers, mining engineers, metallurgists, and architectsshould take at least the junior and middle courses. The junior course, or that of general geology, includes the outlines of dynamical geology mineralogy, petrology, and mining geology. This course of lectures will treat of the various rock-forming minerals, their structure, and composition; of the origin, classification, and determination of rocks in general; of the agents concerned in the production of geological phenomena; of water and its effects in rain, rivers, glaciers; of heat, as exemplified in volcanoes, &c.; of the arrangement, dislocation, &c., of rock beds; of the origin and nature of mineral veins, &c. The course of historical geology will embrace an outline of the laws and generalisations of stratigraphy and palæontology, and will treat of the nature of the several geological formations, their superposition, classification, subdivision, characteristic fossils, and geographical distribution in the British Isles. The middle course, or mining and engineering geology, will embrace the consideration in mineralogy and petrology of the form and structure of minerals, nature of crystalline form, systems of crystalline form, isomorphism, pseudomorphism, &c. Chemical composition of minerals. Classification of minerals. Description and determination of chief rock-forming minerals, &c. Essential ingredients of rocks, lithological classification of rocks, divisions of crystalline rocks; acid, intermediate, and basis rocks; determination of crystalline rocks. Non-crystalline rocks, arenaceous, argillaceous, calcareous, and carbonaceous; alteration of non-crystalline rocks. Structure of rock masses, concretion, lamination, jointing, &c. Elevation, folding, contortion, inversion, rupture, and displacement of rocks. There will also be treated of under the head of mining and economic geology the relation of rock-structure to the form of the ground. Rocks and soils. Comparative local fertility and barrenness of British soils. Rocks used in architecture and road making. Chief British building stones; their geological horizons, geographical position, and special characteristics. Ornamental stones, marbles, granite, &c. Limestones, clays, and cement stones. British slate and slate quarries. Fossils, fuels, peat, lignite, coal. Coal and coal mining. British coal fields. The structure of the South Staffordshire and East Warwickshire coal fields; chief coal seams, positions and characters. Extent of workable coal in England. Metals and metallic ores. Iron. Chief iron-bearing rocks; quality and quantity of seams; geological positions, and mode of occurrence. Vein ores of Britain; lead, copper, tin, &c.; districts where found; characters of veins, and modes of prospecting for ore. Drainage and water supply. Chief water-bearing rocks of Britain. Springs. Artesian wells, &c. There are likewise a geological surveying class, and a senior course on historical geology.

The lecture course in the department of coal mining (Prof. John Brown, M.Inst.C.E., F.G.S., Past-president of the North Staffordshire Institute of Mining and Mechanical Engineers) embrace a series of special lectures upon the chemistry and geology of coal mining, mechanical engineering as applied to coal mining, and upon the theory and practice of coal mining and colliery management, by the professors in chemistry, geology, and engineering, and the professor in coal mining and colliery management. The lecture series, which has received the unanimous approval of the South Staffordshire Institute of Mining Engineers, is intended to meet the requirements of candidates for Certificates of Competency, proprietors of coal mines, mining engineers, mine managers, and others interested in coal mining and colliery management. The attention of candidates preparing for Mining Certificates is especially called to this course, as it includes all those subjects directly connected with coal mining and colliery management in which they have to undergo examination. The lecture course in this department extends over two years, and embraces about 70 lectures in all. During the session excursions will be made by the members of the coal mining class, under the direction of the professors of geology and coal mining, to some of the more important mines and geological localities of the Midland coal fields.

Students in civil and mechanical engineering (Prof. Robert H. Smith, M.I.M.E., Assoc. M.I.C.E.; demonstrator and workshop instructor, J. Hamilton) are allowed to attend any particular classes they may deem more especially important for themselves on condition of their paying the fees and obeying the general regulations of the college; but diplomas will be given to those only who pursue systematically the regular course as stated in the calendar. The programme of study is arranged so that any one year of it may be taken with advantage by a student properly prepared for the work of that year. But the benefit that may be derived from the study of any one year is very much greater for the student who follows out the whole three years' course than for one who omits any part of it. Students entering the first year's course must not be less than 16 years of age. They must have received previously a good education in the English language, arithmetic, and elementary mathematics. The course prescribed for the engineering diplomas includes the study of and examination in the following subjects in the ordinary classes of the respective professors of these subjects:—Mathematics, Prof. Heath; physics, Prof. Poynting; chemistry, Prof. Tilden; geology, Prof. Lapworth; and engineering, Prof. Smith. The plan of instruction is, firstly, to describe the facts of engineering practice—that is, the tools, machinery, and methods used by engineers; secondly, to develope theoretical engineering science as based on these facts; and, thirdly, to apply the scientific knowledge of facts and theory to practical problems in engineering design. The whole of the teaching in Prof. Smith's classes is practical and technical in its aim, no theory being introduced except such as has a direct bearing upon the problems of professional practice, and no theories being taught until the facts upon which they are based have been fully explained. The practical work in the drawing, exercise, and laboratory classes is designed to give familiarity with the processes, calculations, and materials used in engineering establishments and in surveying. In the laboratory the student makes experimental investigations of the properties of tools, machines, and materials, such as he can have no opportunity of making during an apprenticeship at works. College study cannot, however, supersede the desirability of a formal or informal apprenticeship, but the apprenticeship may be shortened by two or three years if the student follows the engineering course offered in Mason College.

GAZETTEER OF CORNWALL.

The sketch of Cornish geology appended to this valuable book of reference, noticed in last week's Journal, is written by Mr. Brenton Symons, F.C.S., and may be considered as a sort of epitome of the stratigraphical relations of the county, and of the phenomena associated with the formation and filling of fissures. Beside a physical description, there is a brief account of the rocks of each mining district, including much interesting information respecting the mines and minerals, and, what will be considered very useful, a few sentences are devoted to each metal, the localities where it prevails, the mode of preparing its ores for the market and method of smelting, together with statistical tables of the production of clays and metals from the earliest times, which have evidently been collected by diligent search.

Some of the views enunciated respecting jointy structure and metamorphic action may seem somewhat at variance with generally received opinions, as do also some of the remarks on walls of lodes, which, as well as the fissures themselves, the author supposes to have been mineralised by ascending currents produced by the contact of the saturated schist with the eruptive rock which uplifted and shattered them. The opinions expressed with regard to the intersections and heaves of lodes are, perhaps, not those held by the old school of miners, as the whole of the phenomena are attributed to vertical movements similar in character to those which have faulted so considerably the strata which enclose the coal beds.

The passages referring to the productiveness of strata are most encouraging, the author strongly maintaining that the mineral wealth of Cornwall is very remote from exhaustion, and that intelligent mining, assisted by equitable financing, would yield results equally as remunerative as those of bygone days. The important subject of poor ores, such as lie in exhaustless quantity in the shallow portions of lodes, and among the vast spoil banks scattered throughout the mining areas, is noticed, and their treatment by wet reduction considered very desirable as a tolerably safe outlet for capital, and as a means of employment of the surplus mining population. The geological descriptions are rendered more comprehensible by the addition of an excellent chromo-lithograph delineating the various rock formations and the numerous fissure systems. The article has been written with a minimum of technicality, and is, consequently, very readable, and as it contains a collective view of the complicated phenomena attending true metalliferous districts, and also a large fund of historical and statistical information, it would, it is thought, be very desirable to have the sketch reprinted and published in a popular form. Subjoined are extracts giving an idea of the contents of the book:—

Nearly all mining districts, says the author, are clearly recognised to bear a close and intimate connection with the metamorphised rocks, which the upheaval of the granite through the argillaceous schist has produced. Though from a cursory examination of a geological map of the county the numerous lodes and cross-courses found far from the confines of the granitic bosses would appear to controvert this statement a little reflection will lead to the conviction that the mineralised strata are almost without exception closely approximate to the eruptive rock if verticality be regarded. Taking such districts as Marazion and Chiverton, both distant some miles from the junction of the crystalline with the schistose rock, we may feel assured from the numerous elvans which traverse the slates that the main mass of granite is not distant. Though the varying size and dip of these elvans modifies to a considerable extent their porphyritic character still from their appearance and mechanical conditions the relative remoteness of the nuclei from whence they proceed can be roughly estimated. Taking, for examples, the thinning of the Gwennap group in the neighbourhood of Truro, where the porphyritic structure is almost lost, and elvan acquires the texture of sandstone, and the Chiverton group, where but for their occurring in slates they might easily be taken for sandstones, one need not hesitate to affirm that where these granitic dykes are absent the argilaceous slates become barren when distant from the eruptive dome. In the districts rarely found in the granite the proximity of the slate seems also to have been essential, and though it would be rash to attempt to judge the amount of denudation which the granite has suffered from the metalliferous character of the existing surface still there is a blank barreness of mineral in some bosses when compared to others, which taken together with the rich stanniferous gravels that once filled the moors would lead to the conclusion that the more or less want of metalliferous wealth may be in relation to the depth of crystalline rock removed by the agency of water.

The grouping of joints, and of elvans, he says in another place has not escaped observation, and the lodes and cross-veins, which follow nearly their direction, affect a similar parallelism. There need be no hesitation in believing that these groups are due to distinct shocks affecting a certain assemblage of slates by which they are often limited. When such a collection of contemporaneous lodes occur in favourable strata, they are—being subject to the same conditions—commonly productive across a zone that coincides approximatively with the bearing of the associated cross-courses—an occurrence which the miner expresses by "ore against ore." At whatever time, during the elaboration of the metalliferous deposits as now seen, veins may have been formed and filled, subsequent shocks not only formed new groups, but opened again the older fissures. The lines of fracture did not necessarily "take the plane of the wall, but frequently crossed the vein irregularly, giving rise to partings in the gangue. In this way the size of lodes was considerably augmented, and this mode of increase is remarkably developed in Crowan and Gwinnear, where the 'comby' quartzose lodes supply the most conclusive evidence of repeated enlargement. In whatever way the downthrows may have been produced, the result in every case is to lower the hanging-wall, which sliding down on the waving inequalities accompanying every fissure, occasioned a succession of cavations that became filled with the valuable metalliferous products, alternating with barren bars of ground at those points where, the two walls being in close contact, the deposition of mineral was obstructed. The deposits in lodes, whether of earthy or metallic minerals, are due to the choking up of the ancient water channels by precipitation."

Walls have, accordingly, a very varied structure, and may possess a sharp line of division, a brecciated character, or may pass into the contiguous rocks by such insensible gradations that it would be difficult to point out where the gangue terminates and the country begins. In granite where the vein matter derived from the contiguous country retains its appearance with greater obstinacy than in clay-slate, the transition, though also gradual, is accomplished in less distance. In schorlaceous lodes the layers of schorl and felspar change so gradually that no definite stratum can be safely selected as the true wall. Slabs of contiguous rock split off along a joint become, by the removal of the soluble parts and the infiltration of quartz, a metallic mineral, true portions of a lode. The wall of a lode is often clearly defined, especially so when the gangue is quartzose. In some lodes boulders like concretionary lumps were found in the walls, and were possibly the first filling of a fissure caused by friction, which, in the absence of mineral in solution was consolidated by earthy minerals. But in numerous other instances in that and in other districts this debris, cemented by spar and sulphurretted ores, or by tin oxide, formed the lode and proved the presence of fertilising solutions. The brecciated character of the fissure walls is, as might naturally be anticipated, very prevalent in all districts, whatever metal the lodes may produce. As the separated pieces are forced off the points where the hanging-wall crushes on the footwall, and the fragments fall into the bottom of the hollows, this brecciated structure is most conspicuous where the lodes become flattened. They occur both in granite and slate, are generally termed the capels of the lode, and in many instances they pass into the country without any plane of separation. These capels much increase the size of the lodes, and often contain a workable percentage of cassiterite. The useful parts of lodes also become larger than the original fissures both in granite and slate by the infiltration of mineral matter into the interstices of a shaken portion of the wall, or into the rock itself by substitution. This mode of lode creation is exemplified in an interesting manner in schorlaceous granite, where rich bunches of ore often accumulate on one or both sides of slender veinlet.

The characteristic absence of metallic ores in cross-courses has, Mr. Symons says, been generally considered by geologists to be owing to their formation during the comparative tranquility that followed the intense thermal action which bestowed on the veins due to upheaval their metallic richness. But if this view be accepted it will render the barrenness of these east and west veins associated with meridional lodes rich in lead rather anomalous. If it be conceded that vast periods of time, according to finite computation, elapsed between the creation of the diverse groups of fissures, intense volcanic action might be going on in one place whilst dormant in another; and in this way cross-veins associated with any particular group may have been fitted with a siliceous gangue, whilst at some distance a series of east and west veins may have been filled with metallic minerals. The alternations in the lodes themselves from earthy to metallic minerals render it evident enough that there were periods of quiescence, when ores of the useful metals were not in solution, or at least when the conditions admitted of no precipitation.

When one reviews the chain of favourable circumstances necessary for the origin, development, and filling of productive veins, no surprise need, says the author, be expressed that the difficulty of discovering rich deposits in them demands such patient perseverance, and so large an expenditure of capital. First, the original composition and structure of the slates, and then their metamorphosis into the thick lamellar masses of alternating density requisite for the formation of true fissures; the resting of these more or less crystalline beds on the granite at angles favourable to the development of cavations, with a strike approximately coincident with the trend of granite, and the direction of the line of volcanic upheaval. The continuance of shocks to re-open the fissures in order to allow faulting between the walls, without which the thermal circulation would be languid, and no lode of any size could develope, and, finally, the formation of cross-courses to tolerate freer movements of the hanging walls of lodes between them.

Antwerp International Exhibition.—This enterprise, which has been already referred to in the *Mining Journal*, is under the patronage of the King of the Belgians, and will be opened on May 2 next year; and application for space must be made at once. It will embrace five principal divisions or sections:—1. Education (including the fine arts, and art applied to industry); 2, manufactures; 3, commerce and navigation; fisheries and pisciculture; 4, electricity; and 5, agriculture and horticulture. Each of which will again be subdivided into groups and classes. The Triennial Exhibition of painting, sculpture, and architecture, to which artists of all countries will be invited to contribute, will coincide in 1885 with the Universal Exhibition. The growing importance and favourable geographical position of Antwerp give every reason to hope that the proposed gathering will be largely attended. No effort will be spared to ensure the success of the undertaking, and to make it worthy of the attention of foreign nations. All necessary measures will, it is stated, be taken on the part of the Belgian Government to protect all patentable inventions, models, drawings, or trade marks which may figure at the Exhibition. An influential committee of citizens of Antwerp, under the honorary presidency of the burgomaster, is now actively engaged in forwarding this vast enterprise in its various branches. An honorary committee has been formed for the United Kingdom, and the committee here have named as their agent or commissioner in England, Mr. F. L. Simmonds, Queen Victoria-street.

FOREIGN MINES.

ANTIOQUIA (Frontino).—J. H. White, July 7: Carmen Mine—Adit: The ..., as far as productiveness is concerned, has not improved, and has been ...er harder for driving; distance driven 2 fms. 4 ft. We are rising from this ...el to No. 6, the rise will be useful for tipping the mineral from No. 6 to the ...ons.—No. 6: Very little improvement is noted in the mineral, but the ...ound is easier, and we seem to be on the point of seeing an improvement; the ...d was driven 3 fms. 1½ ft. during the month. In the winze under No. 6 we ...driving an end west for the reasons explained in my last report; it is in ...rd and unproductive ground. A rise is being carried up to No. 6 from the end ...t from the winze on rich but narrow mineral, and a stope in the roof of this ...el gives good mineral. The work inside the mine is carried on day and night. ...e mill was kept supplied with mineral and old waste from the hillside, and ...e the greater part of the month we were carrying on experiments grinding ...ds in one of the batteries; the produce was low but paid. In the mill we ...ve made some experiments in dressing, which have turned out well. The ...tioquia Mill, owing to the want of the wire-rope incline, was run on waste ...m the hillside, and produced 21½ ozs. of gold dust, with $119·90 ...penses. The produce from the Antioquia stamps, together with that ...m the Frontino stamps, gave a total of 131 ozs. 16 dwts., and the ordinary ...et with the general expenses amounted to $1240·45. In connection with the ...orks on capital account, the laying the tramroad and the works connected ...th it were forwarded, during the month nearly 100 fms. were laid. The ...ining work connected with the adit east of 1877 shaft also made good progress, ...d within two months I hope to have concluded the work on capital ...count connected with the adit. These works caused a cost of $779·95, includ...g sums spent on erecting our concentrating apparatus for treating sands. ...onsidering the actual position of the mine, and the fact that three of the prin...pal works charged to ordinary cost are at present unproductive of mineral, ...e result is surprising, and is owing to the immense amount of mineral and ...aste moved and stamped in the mills during the month; 474 tons were ...heeled and stamped by the Antioquia mill, 126 tons from the mine, and 150 tons ...om outside by the Frontino stamps, to which must be added 124 tons of sands ...stamped in this mill, which were wheeled some 110 fms. The mineral from the ...ine has to be wheeled on the average 305 fathoms, the waste from the hill-side ...0 fathoms, the sands after concentration 110, and a total of 9278 barrows wheeled ...e and stamped in the mills, and 2215 wheeled out of the mine and tipped as ...ttle, or some 1000 tons moved a distance of about 150 fathoms. During the ...onth I hope to see an improvement in the adit and in No. 6, which would help ...s in the mill. Ration, farm, and goods are on a satisfactory footing, as shown ...n the accounts. I hope soon to have the pleasure of seeing Mr. Donagan, and ...f conducting him to the mines.

BELT COPPER.—Mr. Brand, Aug. 11: Champion: No change whatever has ...aken place either in the rise or in the stope. Both are looking remarkably ...ell, the latter producing rich stampwork. In this stope the drill is going ...night and day, employing in all four men. The drill in the rise is working by ...day only, employing two men. Five trammers are employed here. In the rock-...house two men. In the engine-house one. Total number employed on Champion ...pal at present, 14 men.—Knowlton: In the first level we have no drill working ...at present, but will have one shortly when we get some more of the broken rock ...hoisted. In the second level we have two drills stoping, both in good copper ...ground.—Air Shaft: We drilled a hole 14 ft. deep, and charged it with 10 lbs. ...high explosive, expecting this would break through to No. 1 level. It, however, ...failed, so we are sinking the shaft a few feet deeper, and will try the same hole ...again after drilling further; a 14-ft. drill is all the machine can lift to do any ...effect.—Stamp Mill: Of the 1000 tons desired we have stamped 500 tons, with ...the following results:—The first 100 tons gave 7445 lbs. copper, or=3·58 per cent.; ...the second 100 tons, 2627 lbs. copper, or=1·31 per cent.; the third 100 tons, ...4301 lbs. copper, or=2·40 per cent.; the fourth 100 tons, 5088 lbs. copper, or=2·54 ...per cent.; the fifth 100 tons, 5206 lbs. copper, or=2·60 per cent.=2·48 per cent. ...As regards the second lot of 100 tons, the percentage of which is 1·31, I would ...state that this was taken from the burrow, and when we found it so low we ...decided to take all the rest from the mine, which we have done. I would men...tion that the high percentage of the first 100 tons Knowlton is due to the fact ...that it was well selected, and there was an extra amount of heavy copper in the ...ground then being stoped. In addition to the copper obtained from the mill, ...there was 200 lbs. of barrel work obtained from the 500 tons, or ·02 per cent., or ...an average of the whole amount of 500 tons=2·53 per cent.

CALLAO 818.—G. Volveider, July 19: No. 3 Shaft: The timbering and widen...ing is being done as speedily as possible, and I have every reason to believe I will ...complete this in the two months.

CHILE GOLD.—Mr. Nicholson, July 17: Mine: The mine at Cenicero is n a very good state below, the new stope between 9 and 8, 100 ft., being now entirely opened to the east, and a tramroad is being put out towards the east. In Cenicero we are working almost entirely the 100 ft. stope between 9 and 8, and have just opened the eastern stope 100 ft. high. On this and the western level, I should think, there is in sight two years' work without further sinking. The best rock now in view is in the stope 9 to 8, and with the water out, the new tram line running, the new shoot working, these two stopes east and west on this level ought to give very good results, as all the work of shaft sinking can be done away with for at least a year. The mill, as far as the stamps, is in excellent order, and giving the result naturally to be expected from the care that has been exercised in its erection.

— Mr. Rochfort, July 18: No. 1 Shaft: After I took charge all western work was stopped in this shaft, and all our work now is in the opposite direction, with the result of much better looking rock; in fact we are now sending up stone with visible gold. We purpose in this shaft to drive the No. 3 level till we reach the Potosi old workings, and by so doing we can let the water out of these works at least 30 ft., and the engine at No. 1 is quite capable of coping with this. When we get this water down we can drive from Cenicero towards these old Potosi works, and by this means utilise the ground which the new purchase has given us.—No. 4 Shaft: We hope to have better results during the next month, as the rock from No. 4 shaft is really good-looking stuff, and such as causes Mr. Rowse and Capt. Pearce to look forward to better results. The appearance of the stuff from No. 1 shaft is decidedly improved, and in the eastern drive we have a drift 50 ft. from shaft with a vein 3 ft. wide of good promising appearance. N.B.—Mr. Nicholson's agreement with the company having terminated, and he being now on his return home, Mr. Rochfort has been appointed the temporary manager.

COLOMBIAN HYDRAULIC.—W. S. Welton, July 19: Run 105: We cleaned up the upper portion of the sluice after a run of 48½ hours, and obtained gold valued at $404·51. The total cost at the mine for the same period amounted to $156·64, which leaves a profit of $244·87 (48l. 19s. 7d.) The amount of purchase gold on hand was so small that it has been kept for next month. The result of $8393 per hour run is very satisfactory; eight days were lost getting in sluice on account of the great hardness of the gravel in the cut. This time no more sluice is required, and the water was turned on at 1 o'clock on the 17th inst.—Lower Cantedara Ditch: The work of repairing the tunnels will be finished in about 10 days' time, when the water will be turned on, and progress made with bringing the pipe on.

CORPORATION OF SOUTH AUSTRALIAN COPPER.—Captain Bryant, July 12: Masey's Shaft: The stope in bottom of the 60 south, north and south of winze, is worth 2½ tons of 24 per cent. ore per cubic fathom. The drive south for lengthening the stope in that direction is worth 3 tons 24 per cent. ore per fathom. In order to preserve the 60 plat it will be necessary to drive a level north about 3 fms. from forebreast.—Same Level North: The stope in bottom of this level south of diagonal winze, having commenced the rise on eastern part of lode in back of the 70, and sunk a winze on western side of lode in bottom of the 80, and the lode has proved much larger than we anticipated, we have not yet effected a communication, but judging from appearances we should hole in the course of a few days. The lode in the south end of winze and rise is worth 2 tons 24 per cent. ore per fathom, and promises further improvement in that direction. The stope in the bottom of the 50 south has since my last report yielded excellent ores, but during the last few days has somewhat fallen off in value; worth 3 tons 23 per cent. ore per cubic fathom. Other parts of the mine much the same as last reported. During the last fortnight we have been receiving firewood from the immediate neighbourhood, and are now dressing a satisfactory quantity of ore. The contractor has resumed carting ore to Parachilna. Weather at present is all that could be desired, and we are pleased to learn that the Government are about to put on extra road men. With the roads in good repair, we shall be able to forward heavier loads, and thus facilitate the dispatch of stuff to station. Our machinery is in excellent working order.

COLORADO UNITED.—Mr. Macrae, Aug. 9: During the repairing of the boilers the water gained 10 ft. on us, but we have started pumping again, and it is now 3 ft. below the 11th level. We are now engaged repairing the 11th level pump, which was damaged, and shall probably start pumping with it on Monday (Aug. 11). We find a great improvement in the boilers, which steam far easier with a smaller consumption of fuel.—The Mill: We have put through 110 tons of dirt during the week, which has yielded about 3300 lbs. of zinc headings, and 1300 lbs. of lead headings. We expect a better product next week, as the dirt is a trifle higher in quality.—Tributers' Pitches: The tributers on the Blaine lode are drifting west, and are about 10 ft. from the shaft. They have about 1 in. of nice looking mineral showing grey copper. They are now 20 ft. from the line of the two properties. The party to the east on this lode have a good streak of ore in their stope, producing about ¾ ton per fathom. The party on the Fenton lode in the West Terrible tunnel are still sinking, and are down 16 ft. The crevice is barren of solid mineral, but carries native silver rock. The pitch at the back of 10th level produces ¼ ton to the fathom. This is at present stopped, as we cannot hoist the dirt on account of the water. Felix McSweeney's pitch on the Silver Ore lode is at present poor, the lode being broken up. He is raising up through this, and will probably strike ore within a few feet. The pitches on the Brown, Coin, and Chelsea Beach show no material change.—Ore Shipments: Company's ore, 72 sacks; zinc heading weighing 3 tons 346 lbs.; tributer's ore, 348 sacks. On hand, 19 sacks lead headings weighing 1 ton 500 lbs.

DEVALA MOYAR.—Manager, Aug. 1: The works have progressed fairly, and we have been getting some encouraging prospects. At Salomon's Reef the lower tunnel has been repaired, and in about two days we shall resume work in the face, from which point I expect to break into the winze in 20 ft. The winze is, as I have told you, full of water, and will be until the connection with the tunnel is made. The 60 ft. level has been driven 6 ft. The new shoot of quartz continues to look well. The 140 ft. level appears to have struck the same shoot of quartz, and we have a reef 4 ft. wide, which yields good prospects. As soon as the rain holds up a bit we will cart some down to the mill. Harewood tunnel has been driven 3½ ft., and evidences continue to show that we are approaching the reef.

EBERHARDT.—Frank Drake, Aug. 2: Drift 2 from 6000 ft. west advanced 10 ft., total 745 ft.; favourable prospects continue. Drift to the right from Drift No. 2 advanced 21 ft., total 44 ft. We are still following the seam, and are finding more and better quartz than at any time since starting the drift; altogether of an interesting appearance. The showing in upraise No. 5 is also improving as we advance. All three of our drivings are in promising ledge material, with spots of ore, showing that we are surely in a mineralised section of ground, promising to contain a concentrated body of ore, as well as the smaller amounts found as we have advanced. Assays of samples taken during the past week show up to $35 per ton. These are encouraging prospects.

FRONTINO AND BOLIVIA.—Franklin White, July 3: The summaries of work done and produce for June show—Mineral stamped, 2705·81 tons; number of heads, 134; heads at work, 130; duty per stamp head, 20 1-0th tons; time run, 404 days 4 hours; time lost, 60 days 20 hours; produce from company's mines, 1637·29 ozs.; produce from leased mines, 83·00 ozs.; estimated value with premium, 5393l. 12s. 6d.—$26,968·17: working cost, $18,919·35; extra cost, $1376·65; general agency, $2190·75; laboratory, $728·25; gold purchased, $1155·15; farm account, $673·05—$26,543·20—5308l. 12s. 10d. The mineral stamped in June was slightly in excess of that of May, but the quality was not so good. The rains caused little serious damage to the Pocuné ditch, although interruptions were frequent, and the loss of time in the Salada and San Joaquin stamps and in the Silencio pumping-wheel affected the returns considerably. The water supply has been variable, but more than sufficient for the stamps. The weather is now more settled, and we can count on less loss of time. The bottom of the Silencio shaft is looking very well, and produce there has improved. The new stamps started work on the 24h inst. The extra cost was high, but it represents much important work done in the Silencio cross-cut and stamps, Cecilia shaft, &c. No. 4 cross-cut, at Cordoba, is on the point of cutting the lode.

KAPANGA.—P. Argall, July 19: Since the resumption of mining operations on May 26 a large amount of dead work has been accomplished in clearing and retimbering the level cross-cutting to open up and prove the reefs at greater depths, and getting the mine generally in fair working order. The 70 cross-cut was cleared into Scotty's reef, and a commencement made to clear out the rise, with a view of completing it to the new No. 8 level, but finding the rise was completely crushed together we thought it best to suspend operations here until we pick up the run of gold on the new No. 8 level, when the 70 can be driven further south on the reef, and a new rise put up to meet the run of gold. —No. 8 Level: A cross-cut was commenced here in the footwall of the Kapanga reef, and driven east a distance of 98 ft., when Scotty's reef was intersected. A level was then driven south 30 ft. on the course of the reef to get well under the run of gold recently worked on the No. 1 level before rising to communicate with it. We have now commenced rising to the No. 1 level, and fully expect to have the water drained and the ground laid open for stoping in about eight weeks' time. This being the most important point in the mine every effort has been made to open it up with the greatest possible dispatch, and it is being opened up much faster than I anticipated. The present rate of driving (18 ft. per week in stiff blasting ground) is very good indeed. The reef as far as opened on presents a very fine appearance, the leader averaging 8 in. of quartz mixed with calcite and chlorite, with a little native arsenic; the two latter minerals are invariably found in the vicinity of the rich specimen stones which we are daily expecting to fall in with.—No. 1 Level: Owing to the expense of draining by the windlass work has been suspended until the rise from No. 8 is completed. We shall then be in a position to stope out the ground over both levels with speed and economy as the block of ground stoped out over this on the 50 produced over 2l. worth of gold per square yard. I am looking forward to the No. 8 rise opening up a rich and profitable block of ground. The 50 has been cleared out and re-timbered for a distance of 70 ft. north of main cross-cut. At this point the reef is displaced with a slide. This slide was driven on eastward for about 30 ft. We intend shortly to put up a rise over the end of this drive to intersect the main reef about 50 ft. above the level where, judging from the run of auriferous ground in the old stopes, gold should be discovered. The reef has been traced westward along the slide 22 ft., producing in places some very congenial quartz. We are daily expecting the reef to resume its normal bearing, when better results may be expected. No. 2 rise has been cleared, secured, and extended 25 ft. above the former stopes, carrying a very promising leader, averaging 10 in. wide, composed of quartz, with carbonate of lime, and producing a little rich stone. We are now stoping the piece of ground opened out by this rise. No. 2 level, south from Corby shaft, has been driven 22 ft.; the reef at present is small, being in unfavourable strata and broken ground, there are, however, indications of an improvement coming in. The block of ground over this level is standing whole to surface a distance of 100 ft. and being exactly opposite the rich Albion shoot in the parallel Kapanga reef, I am hoping if the ground proves gold bearing that a rich deposit may be met with; all the richest deposits of the district have been found at shallow depths.—Kapanga Reef: In order to open up and prove the hanging-wall branch or leader a level, No. 9, was commenced midway between the 70 and No. 8, and driven south from the 70 rise 43 ft., the leader being principally composed of flookan highly charged with pyrites, and occasionally a little arsenic; scarcely any quartz was met with. It will take fully 50 ft. further driving to reach the proper run of the gold-bearing ground on this level. The hanging-wall leader has not been seen in No. 8 level, except at top of 70 rise, and it is only in the last few days it has been discovered in the intermediate level above No. 8, where we are now opening on it, under where the rich deposit was found in No. 7. The gold in the Kapanga reef is invariably found in the hanging-wall leader; and opening as we now are on this leader in the direct run of the auriferous ground, we are daily expecting to strike rich stone. There is a large amount of unwrought ground in this direction, and should the run of gold be found to make down, we are in a splendid position to trace it step by step, seeing the No. 8 would pick it up in 20 to 30 ft. driving, and the No. 9 in about 50 ft. The 50 has been cleared and timbered 80 ft. south from cross-cut, and driven south on the course of the reef 24 ft. The leader averaged 12 in. of quartz and flookan, through which pyrites was freely disseminated. No gold has been met with for the month in this level. The battery returns are as follows:—10 tons of quartz crushed gave 6 ozs. of gold, and 25 lbs. selected stone 18 ozs. 13 dwts; total, 24 ozs. 13 dwts. melted gold, averaging nearly 2¼ ozs. per ton of quartz. The battery is now running on a large surface of quartz taken from various parts of the mine to prove the general average value of the reefs in the intermediate ground.

MYSORE GOLD.—B. D. Plummer, Aug. 2: Mining Operations: The work in the bottom of Taylor's shaft progresses very well. We have a piece of ground 4 ft. wide on the east-side to blast down, 2 ft. of this is quartz, containing very rich stone; the samples this week were taken from it, and it gave by assay—smalls, 1 oz. 4 dts. 12 grs., and rough ore, 2 ozs. 17 dwts. 4 grs. I do not know how much deeper the old works are gone; there is not pet any sign of a bottom. The pay quartz dip north at an angle of about 45°, so that in a short time we may hope to get it in the winze north of the shaft. As soon as the 173 north end on the west lode is driven far enough we shall sink another winze, and so catch up this run of ore in its dip. The other workings in the 173 are rather poor, but in the north end on the west lode the rock is very kindly looking. The stamping is going on as usual, and we are getting a reasonable quantity of amalgam. In a fortnight from this date I expect to send you another consignment of gold.

NEDENÆS COPPER.—John Daw, jun., G. Y. Mathews, Aug. 20: Skytmur: We are glad to inform you that this mine is drained to the 75 fm. level, and that several miners have been put on to drive and stope. In the 50 fm. level three men are driving the cross-cut north to intersect the No. 2 lode. Yesterday they came into a strong lode of quartz, mica schist, hornblende, slate, &c., in which a good deal of mineral is visible. We do not, however, think that it is the No. 2 lode, because according to recent calculations there should be a few more metres to drive ere the intersection takes place. Two men are driving the intermediate level above the 50 to communicate with the winze sunk from the 20, east of Brown's shaft (see section). This was being pushed by the old company, and had they succeeded in opening this ground, also the section east of Brown's shaft below the 75, these mines would never have been stopped. In the 60 four men are stoping in two stopes, each producing 4 tons of ore per fm., while in the 75 eight men are now engaged stoping in the richest section of ground yet discovered in Skytmur. More miners will be put on as soon as we can engage them. A box of samples will be sent you by this steamer.—Sletne: We have completely drained this mine, and put four men on to stope instead of to sink, so as to procure a complete mixture of our ore for smelting. We shall commence to sink in about a month hence.

Bollestad: We have not begun to drain here yet, as our force has been concentrated on the other mines. It will not be long, however, before this place will be in full swing, because, as soon as drained, any quantity of ore can be broken to be mixed with the more silicious ores from the other mines.—Smelting Department: One of the furnaces is completed. The foundations for the second one is ready, and its erection will be pushed on with all speed. Our blast-engine has been removed from the old mills, and is erected on Bollestad to supply our furnaces. Our portable-engine is now being removed from Skytmur to drive it. The necessary quantity of ore (for the first roasting) from Bollestad mine has almost been procured from the heapsat surface, and we hope in a short time to have a sufficient quantity from the other mines. All the machinery is in good repair and working well.

NEW EMMA SILVER.—G. Cullins, Aug. 14: I commenced work immediately upon receipt of your cablegram of the 7th inst., excavating preparatory to moving boilers and all machinery back into the mountain side, as suggested in my letter to you of May 8 last. Shall push the work with all possible speed to completion, and put the mine in working order. I enclose account current for months of March, April, May, June, and July, with all vouchers, also account sales, lots Nos. 21, 22, 23, 24, and 25 tribute ore concentrated from fillings. Have ordered coal, which will commence arriving early next week.

NEW POTOSI.—John Provis, July 20: Attwood's Shaft: No. 2 drift west is poor. We have driven 9 ft. during the month. The stope above this is in fair milling quartz. The western stope below this level is yielding quartz of 1 oz. to 1¼ oz. per ton. The yield of the quartz from the eastern stope on the eastern side of the winze has fallen off. This will be further prospected, and on the result will depend whether we shall continue stoping. In No. 3 drift west we have driven 12 ft., work having been interrupted during the month through overhauling and repairing pumps, and placing in the level the necessary facilities—roads, shoots, and plat—so as to handle large quantities of quartz rapidly and inexpensively. The vein continues small, but the quartz is of good quality. We have fixed a cistern and sinking pump in the bottom of Attwood's, and shall resume sinking with all possible speed.—Air Shaft: No. 1 drift west has been driven 62 ft., and we expect to communicate with Attwood's this week. The vein in the eastern drift improves as we go eastward. It has been driven 29 ft., but at present I am pushing the western drift so as to communicate as soon as possible for the sake of ventilation.—Scriven's Shaft: The stope at the back of No. 2 drift has been yielding good payable quartz, and the drift east has been driven 14 ft., and the vein looks better during the last week, being 3 ft. 6 in. wide. This level has been made larger, a plat cut, railroad placed, and during the past ten days more than one-third of the quartz sent to mill has come from Scriven's shaft.—Machinery: 40 stamps are in good working order, as well as the two crushers. A trial run was made of the last two new batteries and new crusher, and from the start everything worked well and smoothly. There is an accumulation of work for the lathe on hand, and I may have to start its erection very shortly. We are indebted to the courtesy of the superintendents of some of the neighbouring companies for lathe work, especially in boring some steel tappets (sent for the Potosi Mill some two years ago) to suit our stems, which are of splendid quality, and give great satisfaction. The hoisting engines are in good order, although at Scriven's later on we shall put one of the larger hoists, as the one we have—the vertical hoist—will not work to advantage when we are deeper, not being powerful enough. The feed pumps have arrived, and also main belt and other supplies. Our present main belt has shown signs of weakness, and broken twice, so that the new one is just in time.—Returns of Gold: With regard to the 40 stamps my promise has been fulfilled. From July 15 to 18 the yield per ton of quartz fell off considerably. Since then it has somewhat improved, and on the quality of the quartz will depend the continuous running of the 40 stamps, as we are well prepared, both at the shafts and at the mill, for steady work, and from July 20 we shall be running the 40. I am sending you four bars of gold weighing 415 ozs. The result is lower than I anticipated, but I have already explained the very bunchy nature of the vein at Attwood's, and one cannot estimate the succeeding month's returns by the results of the preceding one. I still hold the opinion that our quartz (as I have always maintained) will improve in depth, and for this reason I am pushing ahead to get a No. 4 drift.—Government Dues: These have been duly paid.—Health: It is with pleasure I have to report a marked improvement since my last. There are no serious cases of sickness, and the entire staff are regular in their attendance to their duties. Water supply is now ample for 40 stamps, and you may at once dispense with all doubt as to a water supply for 60 stamps, as with the sinking of the Attwood's the water will increase, and by sinking a few feet further at Del Dante, we shall also get an increased supply from there.—Summary: The work of development will be actively prosecuted during the month of August. I do not anticipate an improvement soon in the shaft at Attwood's; but in our No. 3 drift we may reasonably hope for an improvement during the month. I shall then sink below No. 3, so as to open up the mine in depth. Our construction account will now be considerably reduced, and the mine exploration and development account somewhat increased.

RICHMOND CONSOLIDATED.—The directors have received information that work at the mine has been recommenced, and the following cablegram has been received:—"Week's run (one furnace), $12,000 from 286 tons of ore; refinery, $14,000."

RUBY AND DUNDERBERG CONSOLIDATED.—Aug. 3: Dunderberg: The tribute pitches are producing about the usual quantity of ore. There are 22 tributers at work, and 16 tons of ore were shipped during the week.—Home Ticket: Drifting was commenced yesterday near the bottom of the winze, about 12 ft. above the bottom level, where there is a large body of low grade ore, with occasional bunches of good ore. I consider the prospect for ore at this point very favourable; two men at work.—Lord Byron: The tunnel has been advanced 12½ ft. during the week; total 83 ft. from No. 2 winze. The orebody in No. 2 cave is improving slightly. The tributers who were working at bottom of No. 1 cave extracted about ¼ ton of fair grade ore, but have discontinued work at this place on account of its being a very inconvenient one to work, and required a great deal of labour to hoist the ore and waste material. They are now working at the south end of the cave at a point 40 ft. below the tunnel level, on a seam of ore about 2 ft. wide. The shaft we are now running the tunnel to connect with has produced far more ore than the one we have already connected with, and the drifts and stopes are more extensive, and I believe it is the best part of the mine.

Telegram (received Aug. 26): 16 tons ore shipped, and 41 tons, smelted, producing to company $202.

UNITED MEXICAN.—Mr. Hay, Guanaxuato, Aug. 11: Mine of El Diamante: In the frente de Adela west though during last week we discovered some strips of quartz, with appearances of ore; the lode is still in an unsatisfactory state. In the pozo de San Ignacio we intend to stop this winze, and in its stead work the cross-cut of San Pablo, continuation of the cross-cut to the alto of frente No. 1 of San Juan west, from where the ends of Adela and Marimeet. In frente No. 1 of San Antemio west the lode is 1 metre wide, but the ore is not so good as it was the previous week. On the 7th inst. the output of this mine was sold in public sale; the produce of this working was 32 cargas of ordinary ore, sold for $225, and three cargas of a fair class for $78. In the frente No. 2 of San Antemo west the lode is only 80 centimetres broad, but the class of ore has improved. We sold in public sale 21 cargas of ordinary ore from this end for $147, and four cargas of a better quality for $85 more, over 48 cargas of an inferior class were disposed of, so that the total sale amounted to 108 cargas, purchased at $821.

Mine of San Cayetano de la Ovejera: In frente No. 3 of San Juan the end is still improving. In the contracieto of pozo No. 4 of San Juan the lode has a breadth of 70 centimetres in fair ore; 4 cargas were sold in public sale for $280. In pozo No. 3 of San Juan no changes have been observed in this winze; the lode, 50 centimetres wide, is in ore. In frente No. 11 of San Andres west the lode is 1·25 metre wide, of which 75 centimetres are in good ore, seemingly improving; 4 cargas were sold in public sale last Thursday for $348. In frente No. 1 of San Andres east this end has not been worked since July 19; it has holed in now pozo No. 2 of San Andres. The frentes No. 13 of San Andres west and east have been opened on the lode, which is 80 centimetres broad in both directions.

In pozo No. 1 of San Andres the lode is 1·40 metre broad, with ore ramified over its extent. We sold 10 cargas for $111. In pozo No. 5 of San Andres this working has been suspended for a short time while the two frentes, No. 13 of San Andres, are more advanced, but last Friday we resumed work in it. In pozo No. 7 of San Andres the load is 1 metre broad, in ore of a fair class. In pozo No. 8 of San Andres the lode is 75 centimetres wide, with a ramification of fair ore in the cross-cut to to the bajo of San Andres. We have driven on the 2nd inst a total of 8·80 metres. In the public sale held on the 7th inst. we have sold 185 cargas for $5514; 444 cargas were sent to Duran, and 1 carga 5 arrobas 14 lbs of bonito was sold, making a total extraction of 631 cargas of hacienda ore from San Cayetano; adding to it 108 cargas from El Diamante we have a produce of 739 cargas from the mines of the new concern, and a total public sale of $6335.—Adit: No ore has been discovered in the frente of San Martin. Returns from the mine of San Cayetano de la Ovejera for the week ending Aug. 9, $8459·86; outlay, $3458. El Diamante returns, $821; outlay, $479.

RAILWAYS, TRAMWAYS, AND SUBMARINE TUNNEL IN ITALY.

Considering the extent of territory and population, the island of Sicily is one of the worst off in Italy as regards railways; and of the seven provinces of Sicily that of Syracuse is the poorest of all in this respect. Palermo had (says Consul Churchill) to fight 16 years before it obtained a bill for the construction of a line connecting it with Girgenti and Catania, and five or six years more were spent in idle talk as to whether the line should pass by Montedero or Caldare. At last it was decided to direct it through Montedoro, but this decision was subsequently abandoned. The same procrastination has attended the construction of the line that was decreed in 1879 to run between Messina and Palermo, along the northern coast of Sicily. Syracuse in 1864 was placed in communication with Catania and Messina by a line along the coast, but this did not profit much to Syracuse, as the interior of its province was completely out of its reach for want of railway communication, and the produce of the interior found its way to other ports. This state of things stirred up the Syracusans to an appreciation of their isolated position, and, after many vain efforts, they obtained, in 1879, a decree for the construction of a line between Syracuse and Licata, but Government does not seem to be in a hurry to begin the works, and it is not yet decided what course it will take.

There can be no doubt that a line passing through Terranova, Vittoria, Comiso, Ragusa, Modica, Scicli, Pozzallo, Noto, and Avolo would be of great advantage to Syracuse, while without one it will dwindle down to nothing in course of time. Whether such a line will pay is quite a different thing. For want of means of communication the once important town of Sciacca has lost its trade and industry, and has considerably lost ground of late. Its mineral baths, which are said to have such curative power in nervous diseases, have been neglected and are almost forgotten, although they had a great reputation in past years. A bill was passed some time back for the construction of a line connecting Palermo with Sciacca *viâ* Corleone, and already the preliminary steps of expropriation have been initiated.

Tramways, with the exception of a few lines in the principal towns, are unknown in Sicily, and yet one would have thought that in a country, where there are but few railways, steam-trams or even horse-trams would have been resorted to to facilitate the carrying trade, In a country in which railways are a burthen to the State and cannot be undertaken by private companies, Government should encourage the construction of steam tramways laid along the roads connecting the different centres of population in the interior of the island, and more particularly in those parts of the island that have no chance of ever having a railway. Steam tramways established in the province of Syracuse especialty, would have the effect of developing the trade of that province, which is now one of the poorest in the island, although it possesses some of its finest soil, which in olden times supplied the whole of the Mediterranean with grain.

Telegraphic communication is becoming more and more a necessity as the trade of the country develops itself, and the Chamber of Commerce of Palermo has recently petitioned the Central Government on the urgeney of laying down a cable between this and Naples. It has for a long time been under consideration, and the reason for not having laid one down already is the want of means. The Chamber of Commerce thinks that the time has come to put aside a reason thut no longer holds good. It is calculated that in the year 1882 no less than 146,783 telegrams were despatched from the Central Telegraph Office of Palermo, of which 131,047 were for the interior and 25,736 from the exterior. The telegrams received were 191,766, of which 176,975 came from the interior, and 14,801 from the exterior. From the Borgo Santa Lucia office (also in Palermo), 10,296 telegrams were despatched, and 7214 were received there, of which 1635 went to, and 973 came from, foreign countries. Several new lines have been laid down in the island, one of which now conncets the islands of Lipari and Salina with Sicily. Telephony is cheaper at Palermo than in any of the great centres of Europe. The cost of being put in communication with others who are subscribers is 8l. per annum, the whole expense of the fittings being defrayed by the telephone company.

EDINBURGH.—Messrs. THOS. MILLER and SONS, stock and share brokers, Princes-street (Aug 27), write:—The leading railway ordinary stocks have been flat to-day on the traffics. Since last report Caledonian have fallen from 101¾ to 100⅝, Highland from 97 to 95, North British from 101¾ to 100½, Edinburgh and Glasgow from 33 11-16ths to 33 5-16ths. Glasgow and South Western have risen from 109 to 110; Great North, on the dividend and good traffic, has advanced from 50 to 51; Portpatrick from 65 to 90. Highly-secured stocks continue in demand. Prairie Cattle shares have given way; the first issue from 6 9-16ths to 5 15-16ths, the second from 6 11-16ths to 6, the third from 7¾ to 6⅞. Arizonas continue to be dealt in to a fair extent. The price, after declining to 24s. 9d., has recovered. Lanark Oil shares have been changing hands freely at fluctuating prices. Pumpherston have risen from 9¼ to 10⅜. Bank and insurance shares have been steady.

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In the High Court of Justice—Chancery Division.
MR. JUSTICE KAY.

IN the MATTER of the PORT PHILLIP AND COLONIAL GOLD MINING COMPANY (LIMITED AND REDUCED);
AND
IN THE MATTER OF THE COMPANIES ACTS, 1867 AND 1877.
Notice is hereby given, that a PETITION for CONFIRMING a RESOLUTION reducing the capital of the above company from £200,000 to £125,000 was on the 17th day of July, 1884, presented to Her Majesty's High Court of Justice, and is now pending; and that the List of Creditors of the company is to be made out as from the 25th day of October, 1884.
MAPLES, TEESDALE, AND CO.,
6, Frederick's-place, Old Jewry, London,
Solicitors to the Company.

CORNWALL.
IN LIQUIDATION.
IMPORTANT AND EXTENSIVE SALE OF
MINING MACHINERY, PLANT, AND MATERIALS
In the several parishes of Perranzabuloe, Newlyn East, and St. Columb Major, in the County of Cornwall.

MR. W. J. JOHNS has received instructions to submit FOR SALE, BY AUCTION, the WHOLE of the
PLANT, MACHINERY, AND MATERIALS
On the several Mines belonging to the Newquay Mining Company (Limited), now in Voluntary Liquidation, as follows:—
On MONDAY, September 1, 1884, at GRAVEL HILL MINE, Perranzabuloe.
On TUESDAY, September 2, 1884, at TREAMBLE MINE, Perranzabuloe.
On WEDNESDAY, September 3, 1884, at DEER PARK MINE, Newlyn East.
On FRIDAY, September 5, 1884, at RUTHER'S (otherwise Toll Dish) MINE, near Indian Queens, St. Columb Major.
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For full particulars see local Advertisements and Handbills.
All further information may be obtained of the Auctioneer (Edward-street, Truro); G. J. HATTERS, Esq., Crown-court Buildings, Old Broad-street, London, E.C.; O. KIMBER, Esq., Seend Ironworks, Melksham, Wilts; Captain J. R. JAMES, Newlyn East, Grampound-road; or of
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ONE AIR-COMPRESSING ENGINE, with 12 inch cylinder, 3 and 3½ in. rock drills, stretcher bars, &c., &c. Our Machines have been driving levels in hard rock 3 to 4 fathoms per week forward. Contracts undertaken.
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PORTABLE STEAM ENGINE FOR SALE, with two 9½ inch cylinders, and link motion reversing gear also gear to wind and pump.
A 9 H.P. VERTICAL STEAM ENGINE, with link motion reversing gear (winding drum if required).
A 6 ft. pan MORTAR MILL, VERTICAL ENGINE, and BOILER combined, on carriage and travelling wheels.
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FOR SALE:—
TWO GOOD WINDING ENGINES, each with cylinder 15½ in. diameter, 2 ft. 7 in. stroke, with drums, brake, and reversing gear.
ONE ditto, with cylinder 20½ in. diameter, 4 ft. stroke, with fly wheel and reversing gear.
ONE ditto, with cylinder 15 in. diameter, 30 in. stroke, drum brake, and reversing gear.
TWO BEAM CONDENSING ENGINES, each with cylinder 21 in. diameter, 4 ft. stroke, nozzles, side pipes, and double beat valves.
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PUMPING ENGINES; WINDING ENGINES; STAMPING ENGINES, STEAM CAPSTANS; ORE CRUSHERS; BOILERS and PITWORK of various sizes and descriptions: and all kinds of MATERIALS required for MINING PURPOSES

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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.		Paid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
12000	Bedford Unit.,* c, Tavis.(£1 liab.)..	0 14	0... 2 ...	1¾ 1⅝...	0 1 0...	0 1	0...May 1884
6000	Carn Brea, c, ŧ, Illogan§†	13 2	11... 4 ...	3⅛ 4 ...	52 11 8...	0 10	0...Nov. 1881
4000	Craignant Bach,* l, Cardigan	5	0... — ...	...	0 5 0...	0 5	0...Nov. 1852
10243	Devon Gt. Consols, c, a, Tavistock*†	1 0	0... 3 ...	2¾ 3 ...	118 7 6...	0 6	0...Dec. 1880
4700	Dolcoath, c, ŧ, Camborne	10 14	10... 73 ...	72½ 73½...	39 16 0...	1 10	0...Aug. 1884
6400	East Pool, ŧ, c, Illogan	0 9	0... 42⅜...40 ...	42⅛ ...	40 15 6...	1 0	0...Aug. 1884
12000	Great Holway,* l, Flintshire	8 0	0... — ...	...	0 12 0...	0 7	6...Sept. 1883
15000	Great Laxey, l, Isle of Man*†	4 C	0... 10 ...	8¾ 9¾...	30 3 0...	0 5	0...May 1884
6400	Green Hurth, l, Durham*	0 6	0... 4½...	4 4½...	4 16 0...	0 5	0...July 1884
9830	Gunnislake (Clitters), ŧ, c	2 2	0... ⅜...	7/16 9/16...	0 19 9...	0 2	0...Mar. 1882
2800	Isle of Man, l, Isle of Man*	25 0	0... — ...	...	83 5 0...	1 0	0...Sept. 1880
6000	Killifreth, ŧ, Chacewater§	4 8	6... ⅜...	¼ ⅜...	0 14 6...	0 2	0...Nov. 1882
20000	Leadhills,* l, Lanarkshire	6 0	0... 1⅞...	1½ 1¾...	1 6 6...	0 3	6...Sept. 1883
400	Lisburne,* l, Cardiganshire	15 15	0... — ...	...	815 0 0...	0 10	0...June 1883
10000	Mellanear, c, Hayle*	2 0	0... 1 ...	½ 1 ...	2 4 3...	0 0	6...Jan. 1884
9000	Minera Mining Co., l, Wrexham*..	5 0	0... 5 ...	4½ 5 ...	69 11 8...	0 2	0...Feb. 1884
20000	Mining Co. of Ireland, cl, c, l*	7 0	0... — ... 1	1½ ...	24 0 0...	0 2	6...Jan. 1880
11829	North Hendre, l, Wales	2 10	0... — ...	...	3 18 0...	0 4	0...Nov. 1882
8146	Ditto	1 5	0... — ...	...	0 11 3...	0 2	0...Nov. 1882
12000	Phœnix United, ŧ, c, Linkinhorne§	6 2	9... 2⅜...	2⅛ ...	17 7 6...	0 1	6...Apr. 1883
12000	Roman Gravels, l, Salop*	7 10	0... 3½...	3¼ 3¾...	9 11 0...	0 5	0...May 1883
6123	South Condurrow, ŧ, c, Camborne§...	7 5	7... 9¼...	8¾ 9¼...	11 8 6...	0 7	0...Aug. 1884
9000	South Darren, l, Cardigan*	1 10	0... 2s. ...	1s. 2s. ...	0 4 0...	0 2	0...Apr. 1880
6000	Tincroft, c, ŧ, Pool, Illogan†§	14 2	6... 7⅛...	6 6⅛...	51 3 6...	0 5	0...Dec. 1881
15000	Van, l, Llanidloes* (in liq.)	4 5	0... 1¾...	1⅝ 1¾...	25 13 0...	0 2	6...Jan. 1883
6000	West Basset, c, Illogan†§	7 10	4... 3⅛...	3⅛ 3 ...	28 3 8...	0 6	8...Apr. 1882
6000	West Kitty, ŧ, St. Agnes	9 10	0... 11⅛...	10¾ 11¼...	2 19 0...	0 10	0...July 1884
6000	Wheal Agar, ŧ, Illogan	19 6	0... 17¾...	16¾ 17¾...	0 15 0...	0 10	0...June 1884
12000	Wheal Crebor, c, Tavistock	2 4	0... 1¾...	1½ ...	1 1 3...	0 2	6...Nov. 1883
1024	Wheal Eliza Consols, ŧ, St. Austell..	18 0	0... — ...	...	59 C 0...	1 0	0...Nov. 1883
6000	Wheal Grenville, ŧ, Camborne	15 0	0... 6⅛...	6 6¼...	2 0 0...	0 2	6...June 1884
4295	Wheal Kitty, ŧ, St. Agnes§	5 12	0... ⅝...	½ ¾...	12 18 6...	0 1	6...Jan. 1881
3000	Wheal Peevor, ŧ, Redruth§	13 13	6... ⅜...	⅜ ⅜...	8 13 6...	0 4	0...Mar. 1881

FOREIGN DIVIDEND MINES.

35500	Alamillos, l, Spain*†	2 0	0...	1⅝...	1¾	1⅝...	2 15	2...	0 2	0	...Mar. 1884
30000	Almada and Tirito Consol., s*†	1 0	0...	5/16...	3/16	5/16...	0 6	3...	0 1	0	...May 1876
20000	Australian, c, South Australia†	7 7	6...	2 ...	1½	2 ...	1 11	0...	0 1	6	...July 1884
15000	Birdseye Creek, g, California*	4 0	0...	⅝...	¾	⅝ ...	1 7	0...	0 2	0	...June 1884
30000	Bratsberg,* c, Norway†	2 0	0...	1⅜...	1¾	1⅜...	0 4	4½	0 1	2½	Mar. 1884
130000	California,* g, Colorado	1 0	0...	⅜...	¾	1/16 ...	0 2	0...	0 1	0	...Aug. 1883
20000	Cape Copper Mining,*† South Africa	8 0	0...	46 ...	43	45 ...	57 17	6...	1 10	0	...June 1884
65000	Colorado United, s-l, Colorado*†....	5 0	0...	2 ...	1¾	2¼...	0 14	6...	0 1	0	...May 1883
50000	Copiapo, c, Chili* (£4 shares)†	3 10	0...	2¾...	2¼	2¾...	2 15	3...	0 1	0	...June 1884
70000	English & Australian,*† c, S. Aust...	2 10	0...	— ...		...	3 2	9...	0 1	0	...Mar. 1884
2000	Eng.-Aus., g, Vict.* pref. (20000 o.)	1 0	0...	— ...		...	0 3	8...	0 3	8	Apr. 1882
25000	Fortuna, i, Spain*†	2 0	0...	3¼...	2¾	3¼...	8 11	5...	0 3	2	...Mar. 1884
72000	Frontino & Bolivia, g, New Gran.*†	2 0	0...	⅞...	¾	⅞ ...	0 12	0...	0 1	0	...Dec. 1883
400000	La Plata, s-l, Leadville†	1 0	0...	5/16...	3/16	5/16...	0 6	6...	0 0	7½	...Oct. 1882
5000	Linares, l, Spain*†	3 0	0...	3½...	2¾	3¼...	19 10	4...	0 3	0	...Mar. 1884
20000	Marbella Iron Ore, *, Spain	10 0	0...	2¼...	2	2½...	0 10	0...	0 10	0	...June 1882
185164	Mason & Barry*c, Portugal	10 0	0...	10⅞...	10⅝	10⅞...	3 15	0...	0 15	0	...Apr. 1884
80659	Quebrada Rail., Land, & Cop. Venezuel	10	0	0...			6 per cent.				1882
50000	Panuicillo, c, Chili*†	4 0	0...	4 ...	3½	4 ...	2 0	9...	0 2	0	...May 1884
25000	Pitangui,* g, Brazil (in. 6000 £1 pd).	0 10	0...	— ...		...	0 1	0...	0 1	0	...Sept. 1880
1400	Pontgibaud, s-l, France†	20 0	0...	8 ...	6	8 ...	30 3	1...	0 11	3	...Dec. 1883
100000	Port Phillip, g, Clunes*† (£2 shares)	1 0	0...	⅛...	⅛	¼ ...	1 14	2...	0 0	10	...Feb. 1881
50000	Rara Fortuna,* s, Argent. Republic.	1 0	0...	— ...		...	0 3	0...	0 1	0	...July 1882
54000	Richmond Consol., s, Nevada*†	5 0	0...	3½...	3¼	3½...	14 13	6...	0 5	0	...Aug. 1883
24532	Rio Tinto,*c, Mortgage Bds., Huelva.	100	C	0...	102 ...	100	102 ...		5 per cent.		...Apr. 1884
325000	Ditto, shares	10	0	0...	16⅜...	16⅛	16¼...	4	6	0...	0 16	0	May 1884
40000	Santa Barbara,* g, Brazil	0 10	0...	— ...		...	0 12	9...	0 1	0	...May 1882
12000	Schwabe Gully, d, Kimberley	10 0	0...	6¼...	5¼	6 ...	6 2	6...	0 10	0	...June 1884
120000	Scottish-Australian Mining Co.*† ...	1 0	0...	2⅝...	2¼	2½...	20 p. cent.		0 2	0	...Apr. 1884
80000	Ditto, New	0 10	0...	1⅜...	1¼	1½...	20 p. cent.		0 1	0	...Apr. 1884
22500	Sierra Buttes, g, California*†	2 0	0...	1½...	1¼	1½...	2 6	6...	0 0	6	...Apr. 1884
40625	Ditto, Plumas Eureka	2 0	0...	1⅛...	⅞	1½...	3 2	0...	0 2	0	...Apr. 1884
253000	St. John del Rey*† (£5 Stock and multiple dealt in) ...			65	75 ...		5 p.c. for half-year, June 1882				
160000	Tambracherry,* g, Wynaad	1 0	0...	— ...		...	0 0	6...	0 0	6	...Aug. 1882
625000	Tharsis,* c, sul, Spain (587330 issued)†	2 0	0...	6¾...	6⅛	6¾...	6 18	6...	0 11	0	...May 1883
14000	Tolima,* g, s, Colombia (A shares) ...	5 0	0...	7½...	6½	7½...	4 16	6...	0 10	0	...June 1884
6000	Ditto (B shares)	5 0	0...	5½...	5	5⅝...	— ...		—	0	—
25000	Victoria* (London), g, Australia ...	1 0	0...	— ...		...	0 13	10...	0 0	5	...Feb. 1881
124221	United Mexican,*†‖ s, Mexico	9 17	6...	3¾...	2⅜	3¼...	0 2	6...	0 0	2	6...May 1884
100000	Victorine (Nevada, U.S.) Deb. Bds...	1 0	0...	— ...		...	0 2	0...	0 0	6	...June 1882
15000	Western Andes, s, Colombia	5 0	0...	4½...	4¾	5¼...	4 16	3...	0 10	6	...Aug. 1884
2100	W. Frntno & Boliv.,* g, Colombia	10 0	0...	— ...		...	4 2	0...	0 8	0	...Apr. 1881
64800	Yorke Pen., c, South Aust. Pref.†...	1 0	0...	⅜...	⅜	⅜...	0 3	0...	0 3	0	...May 1882

§ Have made calls since last dividend was paid.

NON-DIVIDEND BRITISH MINES.

Shares.		Paid.	Last wk.	Clos. pr
25000	Aberduna,* l, Denbigh	1 10	0... — ...	
12000	Anderton, ŧ, c, ŧ, Devonshire	1 2	6... ⅜...	⅜ ⅜
12000	Assheton, l, Carnarvonshire*	5 0	0... — ...	
3200	Blue Hills ŧ, c, St. Agnes§	4 8	6... ¼...	1/16 3/16
10000	Brada, * l, Isle of Man	1 0	0... — ...	
30000	British,* s-l, bl, Wrexham	1 0	0... — ...	
20000	British Manganese Company*	1 0	0... — ...	
20000	Bwich United,* l, Cardigan	1 0	0... — ...	
12000	Collacombe Consols, c, bl, Lamerton	0 2	6... — ...	
50000	Carn Camborne,* ŧ, c, Camborne	1 0	0... ¼...	¼ ⅜
37500	Carnarvonshire Cons.,* l, Llanrwst.	2 0	0... ½...	½ ⅝
6400	Cashwell,* l, Cumberland†	2 19	0... 1¼...	1 1⅜
6000	Cathedral, c, ŧ, Gwennap	1 12	0... — ...	
20000	Central Foxdale,* l, Isle of Man	1 17	6... — ...	
25000	Coed-y-Fedw&Pant-y-Buarth,* l ...	1 0	0... 1¼...	1 1¼
2450	Cook's Kitchen, ŧ, Illogan†	35 14	9... 9 ...	8 9
50000	Creiglog,* l, bl, Denbighshire	0 17	0... ⅜...	⅜ ⅜
38400	Crook Burn,* l, Cumberland	0 17	0... — ...	
48728	D'Eresby Mountain, ŧ, bl, Llanrwst.	0 10	0... ⅜...	⅜ ⅜
12000	Derwent,* l, Durham	4 0	0... — ...	
40000	Devon Friendship,* c, ars, Tavistock	1 0	0... ½...	2s. 3s.
12000	Devon Great United* (2l. shares) ...	1 17	6... ⅜...	⅜ ⅜
50000	Drakewalls,* t, c Calstock	0 15	0... — ...	
50000	Dusby Peru,* bl, l, s, Cornwall	1 0	0... 1 1/16...	1 1/16 1 1/16
12000	East Blue Hills, ŧ, St. Agnes	0 5	0... ⅜...	½ ⅜
6000	East Botallack, ŧ, St. Just	1 2	6... 1¼...	½ ⅝
6144	East Caradon, c, St. Cleer†	5 2	6... ¼...	⅛ ¼
30000	E. Craven Moor,* l, Pateley Bridge	1 0	0... — ...	
15000	East Devon Cons.,* c, Buckfastligh.	2 0	0... ⅜...	½ ⅝
20000	East Long Rake,* l, Wales	1 0	0... — ...	
25500	East Roman Gravels,* l, Salop	1 0	0... ⅜...	1/16 ⅛
18000	East Van, l, Llanidloes*	5 0	0... — ...	
2048	East Wheal Lovell, ŧ, Helston	20 3	6... ¼...	⅛ ¼
100000	East Wheal Rose,* s-l, Newlyn East	1 0	0... ⅛...	⅛ ¼
25000	Eston,* c, Wetton	1 0	0... — ...	⅞ 1⅛
12500	Frongoch,* l, Cardgn (11000 sh. iss.)	2 0	0... ⅜...	⅜ ⅜
12000	Gawton,* c, Tavistock	2 5	0... ⅜...	¼ ⅜
40000	Glasg. Car.,c*(30000sh. £1 pd., 10000	15s. pd.)		¼... ¼ ¼
30000	Gobbett,* ŧ, Devon	1 0	0... — ...	
10000	Goddards,* l, o, Carnarvon	1 0	0... — ...	
22000	Goginan,* l, Cardiganshire	1 2	0... ⅜...	¼ ⅜
25000	Goodevere, ŧ, St. Cleer	1 0	0... ¼...	⅛ ¼
8500	Gorsedd and Merllyn Con., l, Flint.	2 10	0... — ...	1/16 1/16
6000	Great West Chiverton, l, St. Agnes.	0 8	6... ⅛...	⅛ ⅛
50000	Great W. Shepherds* l, Cornwall	1 0	0... — ...	
20000	Grogwinion, l, Cardigan*	2 0	0... — ...	
10000	Gwern-y-Mynydd,* s-l, Flint(pref.)	4 0	0... 1 ...	¾ 1
70000	Gwydyr Amal.* l, bl, Carnarvon	1 0	0... — ...	
8400	Hardshins,* l, Westmore. (10s. sh.)	0 2	6... 3/16 ...	1/16 3/16
12000	Herodsfoot, l, near Liskeard†	1 6	0... ⅛...	1/16 1/16
18000	Hingston Down, c, Calstock*†	0 13	0... ¼...	⅛ ¼
35000	Holway Consols,* l, Flintshire	1 0	0... — ...	
25000	Kit Hill Gt. Cons.*c, ars-m, (2l. sh.)	1 2	6... ⅛...	1/16 ⅛
15000	Lady Ann,* s-l, Llanarmon	1 0	0... — ...	
15000	Llandegla,* l, Wales	1 0	0... — ...	
8120	Lovell, ŧ, Wendron	1 8	0... ⅜...	⅛ ⅜
9000	Marke Valley, c, Linkinhorne†	7 13	6... ¼...	⅛ ⅛
8000	Mona,* c, Anglesea	5 0	0... — ...	
20000	Mona Consols,* c, Anglesea	1 0	0... — ...	
20000	Mostyn Consols,* s-l, Flint	1 0	0... — ...	
12000	Morfa Du, s, g, s, Anglesea*	1 0	0... — ...	
80000	Mounts Bay,* c, t, Breage	1 0	0... 1/16...	1/16 1/16
6144	Mount Carbis, ŧ, c, Redruth	1 15	0... — ...	
12000	New Caradon, c, St. Cleer	0 6	0... 3/16...	⅛ 3/16
2400	New Cook's Kitchen, ŧ, Illogan	10 5	6... 1⅛...	1 1¼
8000	New Dolcoath, ŧ, c, Camborne*	3 0	0... — ...	
10000	New Holmbush,* ŧ, c, Callington	3 0	0... — ...	
6000	New Kitty, ŧ, St. Agnes	1 7	0... 1¼...	1¼ 1¼
25000	New Langford,* s, c, Callington	0 2	6... 1/16...	1/16 1/16
15000	New Redmoor,* sar, Callington	1 5	0... — ...	
17500	New Terras,* ŧ, St. Austell	2 0	0... ⅛...	¼ ⅛
3800	New Tincroft, ŧ, Lelant	6 0	0... — ...	
12000	New Trumpet,* ŧ, Wendron	1 0	0... 1 ...	¾ 1
30000	New Van Cons. & Glyn,*c,	7 0	0... — ...	
12000	New West Caradon, c, Liskeard	0 7	0... ¼...	⅛ ¼
3000	New Wheal Peevor, ŧ, Redruth	0 10	0... — ...	
12000	North Blue Hills, ŧ, St. Agnes	0 2	6... 1/16...	1s. 1s. 6d.
5328	North Busy, ŧ, c, Scorrier†	2 4	8... 2s. ...	1s. 2s.
10000	N. D'Eresby Mount.,* l, bl, Carnarv.	1 0	0... — ...	
25000	North Goginar,* l, Cardiganshire...	1 0	0... — ...	
6400	North Great Hurth,*	1 0	0... 1 ...	¾ 1
25000	North Grogwinion,* s-l, Cardigshr..	1 0	0... ⅜...	¼ ⅜

NON-DIVIDEND MINES—continued.

Shares.		Paid.	Last
12000	North Herodsfoot, l, Liskeard	0 13	6...
2000	North Levant, ŧ, c, St. Just	13 16	0...
60000	North Molton,* c, ms, t, Devon	1 0	0...
2936	North Treskerby, c, St. Agnes	1 0	0...
8000	Northern,* l, Durham	0 17	10...
40000	Okel Tor,* ŧ, c, a, Calstock	1 0	0...
80000	Old Shepherds s-l, Cornwall	1 0	0...
60000	Owen Vean & Tregar.,* ŧ, c, Marazion	1 0	0...
45000	Parys Corporation,* c, Anglesea	1 0	0...
7500	Pateley Bridge, l, Yorkshire	1 0	0...
6000	Pedn-an-dres, ŧ, Redruth	4 10	0...
6000	Pennant, l, bar, North Wales*	5 0	0...
20000	Penegarreg, l, Carmarthenshire	1 0	0...
15000	Pen-yr-Orsedd,* l, Flintshire	1 0	0...
10000	Polberro, ŧ, St. Agnes	0 2	0...
6000	Polcrebo, ŧ, Crowan	1 0	0...
10000	Port Nigel Syn,* s-l, Carnar.(4000 ls.)	0 15	0...
18000	Pr. Patrick,* s-l, (als. 12000 pf. 10 p.c)	1 0	0...
12000	Prince of Wales, s, c, ŧ, Calstock	1 10	0...
36000	Russell United,* c, Tavistock	0 12	0...
30000	Silver Hill,* Callington	1 0	0...
50000	Sinclair,* l, bl, Whitford	1 0	0...
40000	Sortridge,* c, Horrabridge	1 0	0...
30300	South Caradon,* c, St. Cleer†	1 0	0...
6000	South Carbis, ŧ, c, Redruth	0 10	0...
42000	So. Devon Unit.,* c, Buckfastleigh.	0 19	0...
5000	South Dolcoath, c, ŧ, Illogan	1 0	0...
6000	South Kitty, ŧ, St. Agnes	0 10	0...
6000	South Penstruthal, ŧ, c, Gwennap	3 16	6...
30000	So. Phœnix&Caradon,*ŧ, c, Linkinh.	1 0	0...
6000	South Tolcarne, ŧ, c, Camborne	5 11	6...
2043	South Wheal Crofty, c, Illogan	7 4	6...
6000	South Wheal Frances, ŧ, Illogan†..	9 19	4...
30000	Standard,* l, bl., Llanrwst	1 0	0...
40000	Tamar, s-l, Bearalston*	1 0	0...
12000	Trebartha Lemarne, l, Northill	0 6	3...
6000	Tregembo, ŧ, c, Cornwall	4 0	0...
50000	Tregontrees and Old Polgooth Con..	1 0	0...
100000	Tresavean,* ŧ, c, Gwennap	1 0	0...
8000	Trevaunance, ŧ, St. Agnes	0 8	0...
1000	Vaughan,* l, Cardiganshire	10 0	0...
50000	Weardale,* l, Northumber. (4l. share)	1 5	0...
12000	West Assheton, l, Carnarvon	1 0	0...
12000	West Caradon, c, St. Cleer	0 9	3...
30000	West Cornwall,* ŧ, Cornwall	1 0	0...
3000	W. Craven Moor, l, Pateley Bridge*	10 0	0...
12000	West Crebor, c, Tavistock	0 11	6...
10240	West Devon Consols, c, Calstock	1 2	0...
10000	West Godolphin, ŧ, c, Breage	1 3	6...
12000	West Gonamena, c, St. Cleer	0 1	0...
15000	West Holway,* l, Flintshire	1 0	0...
20000	West Lisburne,* l, Cardigan	1 0	0...
2000	West Mary Ann, l, Menheniot	1 18	0...
20000	W. Pateley Bridge, l, Yorkshire	1 0	0...
12000	West Phœnix, ŧ, Linkinhorne	1 5	0...
6000	West Polbreen, ŧ, c, St. Agnes	0 11	0...
5190	West Poldice, St. Day†	7 10	6...
6144	West Wheal Frances, ŧ, Illogan†	14 10	1...
3000	West Wheal Peevor, ŧ, Redruth	4 10	0...
2400	West Wheal Seton, c, Camborne†§	20 0	0...
6144	Wheal Basset, c, Illogan†	9 9	6...
4000	Wheal Benny, ŧ, c, Latchley	5 0	0...
3000	Wheal Boys, ŧ, Redruth	1 3	6...
50000	Wheal Castle,* c, ŧ, St. Just	1 0	0...
12000	Wheal Coates, ŧ, St. Agnes	0 12	6...
2585	W. Comf., & No. Tres., ŧ, c, Gwennap	2 2	0...
50000	Wheal Elizabeth,* ŧ, Cornwall	1 0	0...
12288	Wheal Jane, ŧ, Kea†	3 0	0...
12000	Wheal Jewell, c, St. Hilary	1 0	6...
12000	Wheal Lusky, ŧ, Callington	0 3	9...
2000	Wheal Owles, ŧ, St. Just†	7 3	0...
30000	Wh. Silver & Lanteglos,*s-l, Camelfd.	1 0	0...
6000	Wheal Sisters, ŧ, Lelant	4 2	0...
4096	Wheal Uny, ŧ, c, Redruth	19 19	6...
21866	Wye Valley, l, Montgomery.*	1 0	0...
60000	Yeoland Consols,* ŧ, Devonshire	0 12	6...
4000	Ystwith,* l, Cardigan	1 0	0...

bl, blende; c, copper; g, gold; l, lead; s, silver; s-l, silver-lead; ŧ, tin; z, zinc; ŧ, iron; a, arsenic. * Limited Liability Companies; † quoted on the Stock E. ‖ have paid dividends.

NON-DIVIDEND FOREIGN MINES; FOREIGN AND MISCELLANEOUS STOCKS; TRAMWAYS; INSURANCE COMPANIES; GAS, IRON AND COAL, FINANCIAL AND INVESTMENT COMPANIES, &c.

NON-DIVIDEND FOREIGN MINES.

Shares.		Paid.	Clos. pr.
80000	Akankoo,* g, Gold Cst. (100000 iss.)	1 0	0... 5/16 1/16
64380	Anglo-African,*d, Kimberley,†	10 0	0... 1½ 2½
12000	Arendal, c, Norway	4 0	0...
20000	Asia Minor,*s-l, Lidjeasy, Sivas	0 15	0... 3/16 3/16
28000	Belt,* c, Lake Sup., (22000 £4 paid)	5 0	0...
200000	British Australian,* g, N. So. Wales	1 0	0...
10000	Buena Ventura,* l, Spain (ly. pd)...	2 0	0...
80000	Callao Bis,* g, Venezuela	1 0	0... ⅛ ⅜
62500	Canadian, c, sul,* Canada†	4 0	0... ⅛ ¼
500000	Chile,* g, Venezuela	1 C	0... ⅛ ¼
25000	Chontales, g, s, Nicar.*† (108749 iss)	1 C	0... ⅛ ¼
75000	Colombian Hydraulic, g, Colombia	1 C	0... 3/16 3/16
300000	Devala Moyar,* g, Wynaad†	1 0	0... ⅛ ¼
75000	Devala Provident,* g, Wynaad† ...	0 10	0...
25000	Don Pedro North del Rey*	1 0	0...
205168	Eberhardt, s, Nevada*†	1 0	0... 3/16 5/16
65000	Eureka,* s, Nevada	1 0	0...
40000	Georgia,* g, United States	10 0	0...
65000	Gold Coast,* g, Wassau	1 0	0...
40000	Gold Hill,* g, North Carolina	1 C	0...
20000	Hoover Hill,* g, North Carolina ...	1 0	0... ⅛ ¼
12000	Hultafall,* l, bl, Orebro, Sweden .	5 0	0...
400000	Indian Consolidated,* g	1 0	0... 1/16 3/16
240000	Ind. Glenrock,* g, Wynaad†	1 0	0... 1/16 3/16
100000	Iron Gate*cl. chr. Hungary	1 0	0...
100000	I.X.L., g, s, California*	1 0	0... 1/16 3/16
50000	Javali, g, Nicaragua*	2 0	0...
185000	Kapanga,* g, New Zealand	1 C	0... ⅛ 3/16
100000	Kohinoor,* s, Colorado	1 C	0...
120000	Kongsberg,* s, Norway (1l.)	0 5	0...
500000	Lisbon-Berlyn,* g, South Africa	1 C	0... ⅛ ⅝
65000	London and California, g*†‖	2 0	0...
100000	Michipicoten,* nat. c, Quebec	1 C	0...
300000	Montana,* g.s, U.S.A.	2 0	0... 1⅛ 1⅜
50000	Moselle,* l, b-l, Germany	1 0	0...
35000	Mysore,* g, India†	1 0	0...
75000	New Callao,* g, Venezuela	1 0	0...
78500	New Emma,* s, Utah	10 0	0... ⅜ ⅝
300000	New Potosi,* g, Venezuela†	1 0	0... ¼ ⅜
50000	Olathe,* s-l, Leadville, Colorado ...	1 0	0...
125000	Ooregum,* g, Mysore	1 6	0...
12000	Oregon g, U.S. (4000 prf. sh.)	0 2	6...
15000	Organos,* g, Colombia	1 0	0... ⅛ ¼
20000	Orité,* g, Colombia	1 0	0... 1 1¼
75000	Oscar,* g, Norway (£1)	0 7	6... 1/16 3/16
80000	Ouro Preto*g, Brazil	5 0	0...
80000	Pestarena United, g, Italy*†	3 0	0...
60000	Pierrefitte* (20000 pref.)	1 0	0...
100000	Placerville, g, g, California	1 0	0...
40000	Ravenscliff g, N. Zlnd; c, S. Aust.	1 0	0...
80000	Rhodes Rest,* g, Wynaad†	1 0	0... 1/16 3/16
25800	Ruby and Dunderberg, g, Nev.*† ...	10 0	0... ¼ 1
250000	Sentein,* s-l, bl, Ariège, France...	1 0	0...
100000	Silver Chord,* s, Colorado	1 0	0... 1 1 1/16
150000	Silver Peak,* s, Colorado	1 0	0...
207363	So. Austral. Cop. Mines (Corp. of)	1 0	0... ⅛ ¼
100000	South-East Wynaad, g, India†	1 0	0...
100000	Spitzkop,* g, Transvaal	1 0	0...
100000	Tocopilla,* c, Bolivia	9 15	0... 0 1/16
200000	Transvaal,* g, South Africa	2 0	0... ⅛ 1
50000	Virneberg, c, Rheinbreitb., Ger.*..	2 0	0...
200000	Victoria,* g, Venezuela	1 0	0... ¼ ⅜
120000	Wentworth,* g, Wynaad	1 0	0...
75000	West Callao,* g, Venezuela	1 0	0...
100000	West Frntno & Boliv.,* g, Colombia	1 0	0...
80000	Wynaad Perseverance,*† g	1 0	0...
75000	Yorke Peninsula, c, So. Australia†	1 0	0... ⅛ ⅜
40000	Yuba River,*g, Upd California	1 0	0...

FINANCIAL AND INVESTMENT.

Issue.	Shares.		Pd.	Clos. pr.
49150	10	Aus. Mort. & Agency [L] Eng. issue	2 ...	2¼ 2⅜
20000	25	Australian Agricultural	21½...	109 113
100000	10	Aust. & New Zealand Mort. [L] Shs	1 ...	1⅛ 1⅜
101960	Stk	Do. 4½ per cent. Deb. Stock	100 ...	99 100
80020	25	Aust. Mort. Land & Finance [L]...	5 ...	17⅜ 18⅛
592000	Stk	Do., do. 4 per cent. Deb. Stock	100 ...	100 102
8402	1	Canada Company	1 ...	94 96
263425	10	Canada North West Land Co. [L]	5 ...	2⅜ 2½
130000	1	Central Argentine Land [L]	1 ...	2⅜ 2½
77000	5	Colon. Inv. & Ag. of N. Zealand [L]	1 ...	1 1⅛
1202456	Stk	Foreign & Col. Gov. Trust [L] Pref.	100 ...	115 118
1106756	Stk	Do. Deferred	100 ...	115 118
200010